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MANAGEMENT OF THE COMMERCIAL OPERATIONS
AND SUPPORT SAVINGS INITIATIVE PROGRAM

Report No. D-2001-082

March 19, 2001

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Abstract

Introduction. In FY 1997, the Joint Dual Use Applications Program Office began the Commercial Operations and Support Savings Initiative program. The program goal was to reduce operations and support costs by introducing commercial technology or items into fielded military systems. Commercial technology or items is defined as a product that has been sold, leased, or licensed to the commercial sector. Under the guidance of the Director, Defense Research and Engineering, the Military Departments issued 59 Commercial Operations and Support Savings Initiative projects with an initial value of \$186.2 million, \$47.8 million, and \$51.2 million for FYs 1997, 1999, and 2000, respectively. The DoD investment was \$96.2 for FY 1997, \$32.7 million for FY 1999, and \$35.5 million for FY 2000, with the balance representing contractor contributions. The Commercial Operations and Support Savings Initiative program is a two-stage process. The first stage requires developing and testing a prototype of the commercial technology to prove the technology's application to a fielded military system. If Stage 1 is successful, the Military Department initiates the second stage by procuring and installing the commercial technology prototype into fielded military systems, thus realizing the reduction of operations and support costs. To obtain Stage 1 prototype development, the Military Departments awarded other transaction agreements as authorized by the National Defense Authorization Act of FY 1994, section 845. The other transaction authority was authorized to obtain technology from the commercial sector that traditionally does not do business with DoD because of procurement regulations. Stage 2 requires the use of Federal Acquisition Regulation contracting procedures for the prototype procurement.

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Acronyms

COSSI	Commercial Operations and Support Savings Initiative
DDP	Director, Defense Procurement
DUSD (S&T)	Deputy Under Secretary of Defense (Science and Technology)
OSD	Office of the Secretary of Defense
O&S	Operations and Support



INSPECTOR GENERAL
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March 19, 2001

MEMORANDUM FOR DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
DIRECTOR, DEFENSE PROCUREMENT

SUBJECT: Audit Report on Management of the Commercial Operations and Support
Savings Initiative Program (Report No. D-2001-082)

We are providing this final report for your information and use. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. We request the Director, Defense Research and Engineering provide additional comments to Recommendations 2. and 3. by May 18, 2001.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Raymond A. Spencer at (703) 604-9071 (DSN 664-9071) (rspencer@dodig.osd.mil) or Mr. Roger H. Florence at (703) 604-9067 (DSN 664-9067) (rflorence@dodig.osd.mil). See Appendix F for the report distribution. The audit team members are listed inside the back cover.

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Report No. D-2001-082

Project No. D2000AB-0113

March 19, 2001

Management of the Commercial Operations and Support Savings Initiative Program

Executive Summary

Introduction. In FY 1997, the Joint Dual Use Applications Program Office began the Commercial Operations and Support Savings Initiative program. The program goal was to reduce operations and support costs by introducing commercial technology or items into fielded military systems. Commercial technology or items is defined as a product that has been sold, leased, or licensed to the commercial sector. Under the guidance of the Director, Defense Research and Engineering, the Military Departments issued 59 Commercial Operations and Support Savings Initiative projects with an initial value of \$186.2 million, \$47.8 million, and \$51.2 million for FYs 1997, 1999, and 2000, respectively. The DoD investment was \$96.2 for FY 1997, \$32.7 million for FY 1999, and \$35.5 million for FY 2000, with the balance representing contractor contributions.

The Commercial Operations and Support Savings Initiative program is a two-stage process. The first stage requires developing and testing a prototype of the commercial technology to prove the technology's application to a fielded military system. If Stage 1 is successful, the Military Department initiates the second stage by procuring and installing the commercial technology prototype into fielded military systems, thus realizing the reduction of operations and support costs. To obtain Stage 1 prototype development, the Military Departments awarded other transaction agreements as authorized by the National Defense Authorization Act of FY 1994, section 845. The other transaction authority was authorized to obtain technology from the commercial sector that traditionally does not do business with DoD because of procurement regulations. Stage 2 requires the use of Federal Acquisition Regulation contracting procedures for the prototype procurement.

Objective. The audit objective was to evaluate the management of the Commercial Operations and Support Savings Initiative program.

Results. There were several Commercial Operations and Support Savings Initiative projects that transitioned without problems to either a traditional Federal Acquisition Regulation Part 12 or 15 contract. However, the audit identified that improvements were needed in program oversight and the issuance of prototype other transactions.

- COSSI projects are not subject to formal program management reviews or any type of performance measure to ensure that they are meeting COSSI objectives. As a result, 67 percent of the 30 FY 1997 COSSI-funded projects with a proposed operations and support savings of \$3.25 billion had extended development periods, deviated from program objectives, or lacked procurement funds to acquire the prototype (finding A).

- Language used for prototype other transactions needed improvement. As a result, the Air Force paid \$1.5 million in profits and fees and the Navy and Air Force called six other transactions fixed priced when there was cost-sharing. In addition, the Military Departments used agreement language in 51 of 59 FYs 1997, 1999, and 2000 other transaction agreements that did not require the delivery of a commercial prototype (finding B).

Summary of Recommendations. We recommend that the Director, Defense Research and Engineering, establish a management oversight program for the Commercial Operations and Support Savings Initiative program, issue guidance on the use of program funds, establish a system to monitor the realization of cost savings, and modify the program's selection criteria to emphasize near-term cost savings.

We also recommend that the Director, Defense Procurement, issue policy in DoD directives, instructions, or regulations for prototype other transactions that either precludes or identifies when it is appropriated to provide profits and fees when there is a cost sharing agreement, precludes the establishment of fixed-price other transactions when cost sharing is negotiated, and clarifies the appropriate use of the terms, "support and stimulate," and "reasonable or best effort."

Management Comments. The Deputy Under Secretary of Defense (Science and Technology) and the Director, Defense Procurement, generally concurred with the report recommendations and provided additional comments on the findings. The Deputy Under Secretary of Defense (Science and Technology) stated that an annual formal review process will be initiated that will establish a system for monitoring cost savings. The Deputy Under Secretary partially concurred with the recommendation concerning the use of program funds, stating that, although acquiring training with program funds is inappropriate, obtaining technical data may be warranted. The Deputy Under Secretary nonconcurred with emphasizing near-term cost savings, stating that projected savings are based on present value, thereby already giving greater weight to near-term savings.

The Director, Defense Procurement, partially concurred with the recommendations. The Director stated that the Deputy Under Secretary of Defense (Acquisition, Technology, and Logistics) issued an Other Transaction Guide a month after we issued the draft report, which addressed the issues identified in the report; therefore, the Director believed that additional guidance was not necessary.

Audit Response. Management comments were generally responsive to the recommendations. We considered the comments of the Deputy Under Secretary of Defense (Science and Technology) to the finding and made changes where appropriate. However, we did not revise the tables of data in the report because the audit ended in September 2000 and because the revision would not affect the recommendations requiring increased management oversight. We request additional comments from the Director, Defense Research and Engineering concerning acquiring training and technical data with Commercial Operations and Support Savings Initiative funds, and when a formal process will be instituted to track projects that transition to Stage 2 procurement. The additional comments should be provided by May 18, 2001. No additional comments are required from the Director, Defense Procurement.

Table of Contents

Executive Summary	i
Introduction	
Background	1
Objective	2
Findings	
A. Commercial Operations and Support Savings Initiative Program	3
B. Use of the Other Transaction Authority	14
Appendixes	
A. Audit Process	
Scope and Methodology	19
Prior Coverage	20
B. Summary of Military Department Commercial Operations and Support Savings Initiative Projects	21
C. Summary of Operations and Support Savings	37
D. Summary of FY 1997 and FY 1999 Performance Period and Status	45
E. Comments of the Deputy Under Secretary of Defense (Science and Technology) on Finding A and Audit Response	50
F. Report Distribution	56
Management Comments	
Deputy Under Secretary of Defense (Science and Technology) and Director, Defense Procurement	59

Background

In FY 1997, the Joint Dual Use Applications Program Office began administering and funding the Commercial Operations and Support Savings Initiative (COSSI) program to introduce commercial technology or items into fielded military systems. The Joint Dual Use Applications Program Office consisted of the Director, Defense Research and Engineering, the Military Departments, and the Defense Advanced Research Project Agency. Beginning in FY 1999, the responsibilities for the COSSI program transitioned to the Military Departments.

Commercial Operations and Support Savings Initiative Program. The goals of the COSSI program are to reduce operations and support (O&S) costs that are associated with owning and operating a fielded military system by introducing a prototype commercial technology into that system. A commercial technology or item is defined as a product that has been sold, leased, or licensed to the commercial sector. The Military Departments issued 43 COSSI projects for FYs 1997 and 1999 and 16 COSSI projects for FY 2000¹ (Table 1). Appendix B identifies the individual projects. No funds were available for FY 1998.

Table 1. Values of COSSI Projects Including DoD and Contractor Cost Share						
	<u>FY 1997</u>		<u>FY 1999 ¹</u>		<u>FY 2000 ¹</u>	
	<u>Awards</u>	<u>Value (\$)</u>	<u>Awards</u>	<u>Value (\$)</u>	<u>Awards</u>	<u>Value (\$)</u>
Army	10	52,674,838	3	8,299,260	4	9,177,590
Navy	14	82,676,286	5	22,536,220	9	21,755,351
Air Force	<u>6</u>	<u>50,822,580</u>	<u>5</u>	<u>16,954,490</u>	<u>3</u>	<u>20,302,135</u>
Total	30	186,173,704	13	47,789,970	16	51,235,076

¹ OSD reported that the Military Departments issued 60 COSSI projects during FYs 1997, 1999, and 2000. The difference of one project is represented by the Army's issuing an FY 1998 modification to an FY 1997 COSSI agreement and OSD recording the modification as an FY 1999 COSSI project. This audit did not treat the FY 1998 modification as a new agreement. Also, differences in the number of awards reported by OSD in FYs 1999 and 2000 were because OSD recorded awards by the fiscal year of appropriation (funding) used to support the project; during the audit, we recorded the agreement in the fiscal year of the other transaction award.

The Director, Defense Research and Engineering, annually issues a request to the commercial sector for COSSI proposals. Commercial firms submit COSSI proposals in response to a request from the Director, Defense Research and Engineering. The proposals are evaluated by the Military Departments based on six criteria: the potential O&S cost savings, military project manager commitment, technical and management approach, commercial technology leveraged, non-Federal cost share, and equivalent system performance.

When the proposal is selected, it enters a two-stage COSSI process. Stage 1 requires the contractor(s) to develop a prototype of the commercial technology for testing to determine its suitability for the military system. Stage 1 is typically a 12- to 24-month process and usually requires cost sharing between the contractor(s) and DoD. Upon successful completion of Stage 1, the Military Department that maintains or operates the military system for which the prototype was developed will decide whether to transition to Stage 2 procurement. Stage 2 begins the production of the prototype and the realization of the O&S cost savings.

Steering Committee. In the memorandum of August 15, 2000, “Establishment of a Steering Committee for COSSI,” the Office of the Under Secretary of Defense for Acquisition and Technology (now Acquisition, Technology, and Logistics) established a COSSI steering committee to enhance the link between the technology development and sustainment and readiness. The memorandum states that the steering committee will provide direction and oversight to ensure that the COSSI program objectives are being addressed.

Prototype Other Transaction Authority. The National Defense Authorization Act of FY 1994, section 845, authorizes the use of the other transaction authority to allow for prototype projects that are directly relevant to weapons or weapon systems. The COSSI Stage 1 projects use the other transaction authority to obtain commercial technology from contractors who do not normally conduct business with DoD. Stage 2 requires the use of Federal Acquisition Regulation contracting procedures for the prototype procurement.

Objective

The audit objective was to evaluate the management of the COSSI program. See Appendix A for a discussion of the audit scope and methodology.

A. Commercial Operations and Support Savings Initiative Program

COSSI projects are not subject to formal program oversight reviews or any type of performance measure to ensure that projects are meeting COSSI objectives. This condition exists because adequate management oversight had not been established. As a result, 67 percent of the 30 FY 1997 COSSI-funded projects with a proposed operations and support saving of \$3.25 billion had one of the following:

- extended development periods,
- deviations from program objectives,
- lack of procurement funds, and
- training and technical data that were acquired prematurely.

In addition, only 4 of the 30 FY 1997 COSSI projects transitioned to Stage 2, as of September 30, 2000, and Military Departments had not determined whether any of the O&S savings were realized for the transitioned projects.²

Program Goals

The COSSI program was initiated to introduce commercial technology into fielded military systems to reduce O&S costs. The COSSI program defines commercial technology as “a product that is of a type customarily used for non-Government purposes and that has been sold or offered for sale, lease, or licensed to the general public. Included are commercial items that have had minor modifications to meet Federal Government requirements, but that have not significantly altered their non-governmental function or essential physical characteristics.” The COSSI guidelines state that the typical period for evaluating whether an existing commercial technology is applicable to a fielded military system is 12 to 24 months.

Although COSSI projects were intended to quickly introduce commercial technology into fielded military systems, projects lacked procurement funds, commitment letters were inadequate, development periods were lengthy, and projects deviated from program objectives.

²The data cited in this report were as of September 2000, the end of the audit. Management comments to the draft report of February 8, 2001, reported that three additional projects transitioned to Stage 2 procurement. We did not revise the report to reflect these projects, which were added after the end of the audit period because it would not change the overall audit conclusions.

Program Execution

COSSI-sponsored development efforts had not transitioned to Stage 2 procurements because Military Department project managers did not budget for Stage 2 procurements and because technical problems occurred during prototype development.

Budgeting for Stage 2 COSSI Projects. Military Department project managers had not budgeted for COSSI Stage 2 procurements and therefore O&S cost savings were not achieved or savings will be deferred if the projects are successful. Of the 43 FYs 1997 and 1999 COSSI projects, 23 (53 percent) did not budget for Stage 2 procurement (Table 2).

Table 2. FY 1997 and FY 1999 COSSI Projects Not Budgeted for Stage 2

	Army	Navy	Air Force	Total
1997 Projects	4 of 10	12 of 14	1 of 6	17 of 30
Percent	40	86	17	57
1999 Projects	2 of 3	3 of 5	1 of 5	6 of 13
Percent	67	60	20	46

Appendix D provides the budgetary status of FYs 1997 and 1999 projects.

One of the causes of unfunded Stage 2 COSSI projects was inadequate financial commitment letters from Military Department project managers during the COSSI selection process. The COSSI program requires project manager commitment letters from the responsible official for the fielded military system. The COSSI guidelines require the commitment letters to:

- state that the Military Department supports the technical approach for the technology insertion into the fielded military system;
- state that the Military Department project manager supports the COSSI project through contributing facilities and equipment for testing the commercial prototype;
- state that the projected O&S cost savings will be realized without degrading the performance of the fielded military system; and
- demonstrate that the Military Department will have procurement funds available or are actively pursuing funds.

- to address funding for Stage 2 to demonstrate they will have procurement funds available or are actively pursuing funds.

However, the commitment letters for 28 (65 percent) of 43 COSSI-approved projects for FYs 1997 and 1999 did not contain statements that Stage 2 procurement funds were available to acquire the prototype commercial technology. Review of the commitment letters by fiscal year and Military Department is shown in Table 3.

Table 3. FY 1997 and FY 1999 COSSI Projects with Inadequate Military Department Commitment Letters

	Army	Navy	Air Force	Total
1997 Projects	6 of 10	10 of 14	4 of 6	20 of 30
Percent	60	71	67	67
1999 Projects	2 of 3	2 of 5	4 of 5	8 of 13
Percent	67	40	80	62

As a result of inadequate commitment letters and the unavailability of procurement funds, three successful Stage 1 COSSI projects for the Navy and Marine Corps did not transition to Stage 2 procurements. These three programs are:

- the Acoustic Emission and Ultrasonic Testing for Periodic Inspection of Pneumatic Pressure Vessels (Agreement No. N00024-97-H-4194),
- the USMC Signal Intelligence/Electronic Warfare System Interoperability (Agreement No. M67854-97-C-2115), and
- the Laser Cladding Applications in the Operation and Support of Land Based Vehicles (Agreement No. M67854-97-C-2116).

As a result of the lack of Stage 2 procurement funds, the projected O&S cost savings of \$76.8 million will not materialize. Continued delays in funding these successful Stage 1 projects increase the risk of technological obsolescence of the commercial products adapted for military use. This is especially true where commercial electronics and software are involved.

Officials in the Office of the Secretary of Defense (OSD) and the Military Department COSSI program should require project managers to specifically budget for COSSI Stage 2 procurements when submitting a COSSI proposal. Formal Stage 1 reviews should be conducted annually to ensure that Military Department project managers have adequately planned for Stage 2 procurements. If during these formal annual reviews it is determined that project managers have not adequately planned for a Stage 2 procurement, COSSI program officials should determine whether continued Stage 1 funding is justified.

Status of FY 1997 COSSI Projects. The COSSI projects that transitioned to Stage 2 procurements during FY 1997 were limited, COSSI commercial prototypes had lengthy development periods, prototype developments deviated from the initial effort of proving a commercial technology, additional technical development in Stage 2 was required, and training and technical data were acquired during prototype development.

Procurements. Of the 30 COSSI projects funded in FY 1997, 4 (13 percent) transitioned or will transition to Stage 2 Federal Acquisition Regulation (FAR) contract by September 2000. Of the remaining 26 projects:³

- Sixteen projects were in Stage 1 for development.
- Five projects completed Stage 1, but either the technology was no longer needed or the commercial technology was inapplicable to the military system.
- Three projects were successful, however the project managers did not have Stage 2 procurement funds.
- One project proved a technology capability of producing a product more efficiently and prime contractors in a subcontractor/vendor relationship could acquire the product.
- One project was terminated during Stage 1.

Table 4 shows the number of FY 1997 COSSI projects that transitioned or will transition to Stage 2 FAR procurement.

Table 4. FY 1997 COSSI Projects That Transitioned or Will Likely Transition to Stage 2 Procurement				
	Army	Navy	Air Force	Total
Projects	1 of 10	0 of 14	3 of 6	4 of 30

Examination of the Stage 2 procurements identified that the Army and Air Force issued four FAR contracts or the Stage 1 technology was incorporated in a larger FAR contract. For the four FAR contracts, two were issued as FAR Part 12, "Acquisition of Commercial Items" and two were issued as a FAR Part 15, "Contracting by Negotiations" contracts. Appendix B identifies the FY 1997 projects that transitioned to a FAR contract.

³ On February 8, 2001, the DUSD (S&T) reported that three other COSSI projects had transitioned to stage 2 contracts.

Table 5. Operations and Support Projected Cost Savings for Projects That Transitioned to Productions

	<u>FAR Part 12</u>	<u>FAR Part 15</u>
Army	\$819,900,000	\$0
Air Force	\$ 41,445,000	\$175,401,400

Length of Development Process. The COSSI guidance states that the development and evaluation of a commercial technology for application to a fielded military system should take 12 to 24 months because the proposed commercial technology is already sold, leased, or licensed to the general public. The 12- to 24-month timeframe is needed to perform the necessary modifications and testing on the proposed military system. Our examination of the COSSI projects identified that 25 of 30 projects for FY 1997 and 11 of 13 projects for FY 1999 had an initial Stage 1 performance period of up to 24 months (Appendix D). In addition, 15 (50 percent) of the 30 projects for the FY 1997 performance period were extended beyond the initial negotiated development periods (see Table 6).

Table 6. FY 1997 Project Development Extensions

	<u>6-12 Months</u>	<u>More Than 12 Months</u>
Army	3 of 10	4 of 10
Navy	0 of 14	5 of 14
Air Force	2 of 6	1 of 6

With the technology already available to the general public, the extended performance development periods for some COSSI projects indicate that the commercial technology may not have been applicable to fielded military systems. Projects with extended performance periods should be formally examined to ensure that COSSI goals are still achievable.

Program Deviations. Although COSSI projects were initiated to determine whether existing commercial technology was applicable to fielded military systems, three projects deviated from the initial proposed efforts. The following are examples of FY 1997 COSSI projects that deviated from the initial objectives and savings.

Switchable Eyesafe Laser Rangefinder Designator. The Army Communications and Electronics Command issued agreement No. DAAB07-97-9-D615 for the development of the Switchable Eyesafe Laser Rangefinder Designator (the Designator). The Designator was planned to modernize the helicopter mast mount sight of the Kiowa Warrior helicopter to improve reliability and training. The initial development effort was for \$5.9 million over a 22-month period with an equal cost share. Due to technical problems experienced with the diode subcomponent, technical efforts were redirected to develop the diode subcomponent. During the project, the Army increased its development funds by \$9.9 million for a total cost of \$15.8 million and the development period was extended to 33 months. The Army Communications and Electronics Command made two significant changes in the initial statement of work and deviated from the initial proof-of-technology by developing a new diode subcomponent for the Designator. As a result, the initial prototype effort determined that the commercial technology proposal was not applicable to a fielded military system; however, the Army continued development of the Designator under the COSSI program that will result in the development of a military unique item.

Lithium Ion Polymer Batteries for Navy Underwater Use. The Naval Sea Systems Command issued agreement No. N00024-97-H-6398 for the development of the Lithium Ion Polymer Battery for Navy underwater vehicles. The COSSI proposal was to develop a battery that would last 5 times longer than existing battery for three unmanned underwater vehicle programs. The COSSI effort was for \$5.9 million, with a COSSI cost share of \$3.4 million for battery development, over a 24-month period. The battery development experienced technical and manufacturing difficulties because the contractor underestimated production costs, resulting in a 17-month delay and doubling the Stage 2 procurement battery costs for the three unmanned underwater vehicle programs. The COSSI project was approved based on a proposed \$60 million O&S cost savings for the three program vehicles. However, two program offices indicated that they would not procure the batteries in Stage 2 due to increased battery costs and the lack of program funds, which resulted in lost potential O&S cost savings of \$35.8 million. In addition, because of the reduced production quantities, battery costs for the third vehicle program doubled, thereby reducing O&S cost savings by \$15.3 million. As a result, \$51 million (85 percent) of the originally proposed \$60 million O&S cost savings will not be realized.

AN/BQR-22A Sonar Program. The Naval Sea Systems Command issued agreement No. N00024-97-H-6244 to introduce commercial-off-the-shelf technology into the AN/BQR-22A receivers on Navy submarines. The other transaction agreement was valued at \$4.1 million, with COSSI providing \$3.1 million over an initial development period of 18 months. However, the sonar receiver system is being replaced by a new Acoustic-Rapid Contractor Off the Shelf Insertion (A-RCI) sonar system, and program officials stated that they

will no longer need the prototype technology developed under the COSSI program. The AN/BQR-22A Sonar program manager indicated that the COSSI project should have been terminated; however, the recommendation was not supported by senior management officials. As a result, Navy program officials continued to expend COSSI funds to upgrade the existing sonar receiver, even though the technology was no longer needed and the O&S cost savings of \$10.5 million would not be realized.

Continued Prototype Development. Three COSSI projects did not meet the COSSI objective of proving the technology application in Stage 1 because the COSSI projects needed continued prototype development before a Stage 2 procurement contract could be awarded. For example, the Naval Air Systems Command issued a COSSI project, “Commercially Based Processing for T-45TS,” agreement No. N00019-99-9-1662, valued at \$9.8 million, to replace the instrumentation displays of aircraft functions. In Stage 1, program officials were to replace the existing display processor and legacy software with a commercially designed mission display processor. However, the prototype development hardware would be complete during Stage 1, but further software and testing would be required in Stage 2 that was not funded at the time of the audit. Subsequently, Navy program officials were successful in obtaining funding for the software changes during Stage 1. Navy program officials stated that additional software testing is required in Stage 2, however, funding has been identified.

Training and Technical Data Acquisition. The COSSI funds were used to acquire training and technical data during Stage 1 even though the only purpose of Stage 1 is to prove the applicability of a commercial technology to fielded military systems. The Marine Corps issued an other transaction agreement for the development of a SIGINT/EW system, No. M67854-97-C-2115, valued at \$3.8 million with equal cost shares. The effort was to provide message format and protocol translation functions using dissimilar software on a single processor; however, the Marine Corps included in the agreement a requirement for training and technical data valued at \$105,000. The acquisition of training and technical data was inappropriate for a COSSI Stage 1 agreement because the application of the technology had not been determined. The acquisition of the training and technical data should have occurred during the Stage 2 procurement.

Conclusion. The OSD and Military Department COSSI program officials monitor COSSI projects by requesting status reports from the Military Department project managers. Few projects have transitioned to Stage 2 procurements, COSSI projects had extended periods of development, deviated from the initial COSSI objectives, and COSSI funds were used to acquire training and technical data inappropriate for the Stage 1 development. The OSD needs to establish management controls to provide oversight of the COSSI program to ensure that funded projects do not unjustifiably deviate from the COSSI program goals.

Operations and Support Cost Savings

The primary objective of the COSSI program was to reduce O&S costs of fielded military systems. Although COSSI officials evaluated proposals based on projected savings, a significant amount of the cost savings were attributed to the out-years. Also, COSSI program officials did not establish a measurement system to determine whether projected COSSI O&S cost savings were realized.

Projected Operations and Support Cost Savings. As part of the proposal selection process, COSSI projects are evaluated based on a 10-year projection of O&S cost savings if the technology is introduced in fielded military systems. Projected O&S cost savings for FYs 1997 and 1999 totaled \$4.4 billion and \$1 billion, respectively. Tables 7 and 8 show the percent of projected O&S cost savings for three incremental periods.

Table 7. Percent of FY 1997 Projected O&S Cost Savings

	<u>Years 1-3</u>	<u>Years 4-6</u>	<u>Years 7-10</u>
Army	17	31	52
Navy	10	34	56
Air Force	22	30	48

Table 8. Percent of FY 1999 Projected O&S Cost Savings

	<u>Years 1-3</u>	<u>Years 4-6</u>	<u>Years 7-10</u>
Army	50 ⁴	24	26
Navy	4	31	65
Air Force	9	36	55

As illustrated in Tables 7 and 8, the majority of the projected O&S cost savings were in the out-years. Appendix B provides the proposed O&S cost savings for the individual COSSI projects. COSSI projects that have substantial savings in

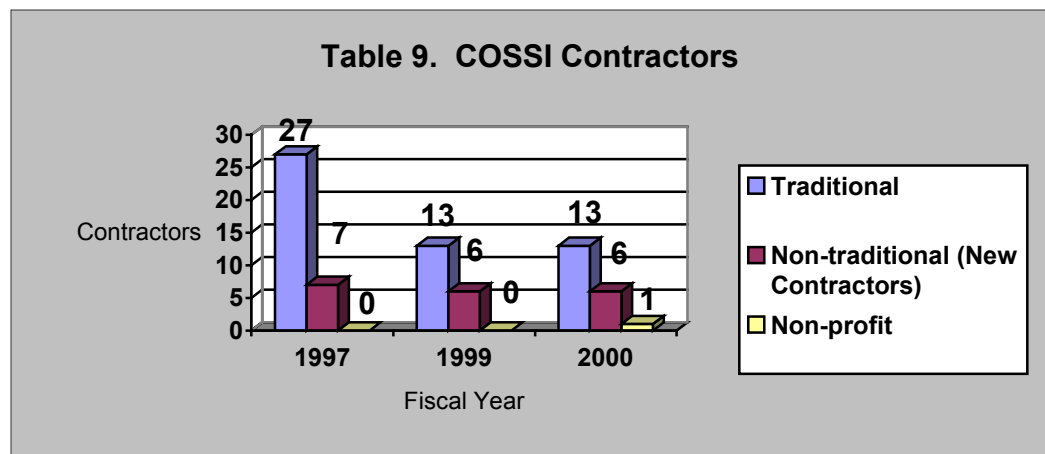
⁴ One of the three Army projects had 51 percent of its projected savings in the first 3 years.

the out-years are less likely to materialize because of program uncertainties; for example, changes in program priorities, budget constraints, and changing technology. Guidance for selecting COSSI projects should emphasize savings in the near term as opposed to the out-years. The OSD should modify the COSSI criteria and emphasize COSSI projects with proposed near-term savings.

Government Performance and Results Act. The Government Performance and Results Act requires that performance be measured throughout DoD; however, OSD and Military Department COSSI officials had not developed a formal process to measure the success of the COSSI program. Projects funded by COSSI had projected savings of \$4.4 billion for FY 1997 and \$1 billion for FY 1999, and \$7.1 billion for FY 2000. With an initial projection of \$12.5 billion O&S cost savings, OSD, in coordination with the Military Departments, should develop a formal process to track and measure O&S cost savings. After 36 months, the Military Department had not determined whether any of the O&S savings occurred. Establishing such a system would enable COSSI officials to determine whether goals are being achieved and provide information to justify further expansion of the program.

New Contractor Participation

The COSSI program uses the other transaction authority to attract technology from commercial firms who do not provide services to DoD (new contractors). The other transaction authority removes many of the acquisition regulations normally established for contracts including the Federal Acquisition Regulation, the Defense Federal Acquisition Regulation Supplement, and cost accounting principles. The COSSI program uses the other transaction authority to obtain commercial technology from the commercial sector; however, as shown in Table 9, the majority of contractors identified in the COSSI agreements were traditional DoD contractors.



Of the 59 COSSI agreements issued in FYs 1997, 1999, and 2000, 45 agreements were issued to traditional defense contractors as the only prime contractors. Although the other transaction authority for the COSSI program did not achieve its intended objective of attracting commercial technology from the commercial sector (nontraditional contractors); the use of the other transaction authority apparently was successful in helping the Military Departments to negotiate cost share with participating contractors and reduce DoD prototype development costs.

Defense Procurement officials believe that the nontraditional contractor participation was more than identified in Table 9. The increased participation is attributed to the inclusion of nontraditional contractors that participated in the COSSI agreements as subcontractors. Of the 59 COSSI agreements, 20 agreements included a nontraditional contractor as the prime or subcontractor. We did not include subcontractors in Table 9 because the COSSI agreement relationships are between the Military Departments and the prime contractors.

Management Comments on the Finding and Audit Response

The Deputy Under Secretary of Defense (Science and Technology) (DUSD (S&T)) responded to the audit report for the Director, Defense Research and Engineering, and provided extensive comments to the finding. Appendix E summarizes the comments and provides an audit response.

Recommendations, Management Comments, and Audit Response

A. We recommend that the Director, Defense Research and Engineering:

1. Establish a management oversight program for the Commercial Operations and Support Savings Initiative that requires a formal review of Stage 1 funded projects annually. The formal annual reviews should include an examination of the status of Stage 1 funded projects to determine whether the projects are progressing as initially proposed, whether the projects deviated from the modification of existing commercial technology, and whether Military Department project managers took adequate actions for the Stage 2 procurement.

Management Comments. The Deputy Under Secretary of Defense (Science and Technology) (DUSD (S&T)) responded to the audit report for the Director, Defense Research and Engineering. The DUSD (S&T) concurred and stated that COSSI projects are reviewed periodically through data calls to determine project status. The DUSD (S&T) stated that a web-based monitoring and tracking system is being developed; that the Military Departments conduct reviews; and that a more formal review process will be initiated on an annual basis.

2. Issue guidance that precludes the use of Stage 1 funds for obtaining training and technical data.

Management Comments. The DUSD (S&T) partially concurred. The DUSD (S&T) stated that it is not appropriate to acquire training with Stage 1 funds; however, acquiring technical data may be necessary to acquire the prototype from other than the Stage 1 contractor although such a scenario is unlikely. The DUSD (S&T) stated that DoD should retain flexibility to obtain technical data if such data are in the best interest of DoD.

Audit Response. The comments of the DUSD (S&T) are partially responsive to the recommendation, and we agree that there may be instances in which obtaining technical data during Stage 1 may be appropriate. However, the response did not identify when guidance would be issued. Therefore, we request that DUSD (S&T) provide comments to the final report that identify whether policy will be issued that preclude the use of Stage 1 funds for training, and that state when it is appropriate to acquire technical data.

3. Establish a formal process to track operations and support cost savings for the Commercial Operations and Support Savings Initiative projects that have transitioned to a Stage 2 procurement.

Management Comments. The DUSD (S&T) concurred, and stated that the Steering Committee will provide COSSI oversight and will address this issue.

Audit Response. The comments of DUSD (S&T) are partially responsive to the recommendation. However, the comments did not identify when a formal process to track operations and support cost saving would be established. Therefore, we request additional comments to the final report on when the tracking process will be established.

4. Modify selection criteria for the Commercial Operations and Support Savings Initiative project to emphasize the selection of proposals that project near-term cost savings.

Management Comments. The DUSD (S&T) nonconcurred and stated that COSSI project proposals are ranked using net present value, and, accordingly, projects with near term-savings are given greater weight than projects with out-year savings. DUSD (S&T) stated that no savings can occur until the prototype is inserted in the system and that it is unlikely to have any significant savings during the first few years of a project.

Audit Response. Although DUSD (S&T) nonconcurred with the recommendations the overall comments address the issue. We were aware of the COSSI evaluation process using net present value; however, as identified in Tables 6 and 7, large cost saving projects are in the out-years where the status of weapon systems and technologies are unknown. Near-term savings projects should be emphasized because of program uncertainties and funding levels and changes in priorities. However, the recent creation of the COSSI Steering Committee and the establishment of a formal COSSI process to track operations and support cost savings should assist management in identifying whether and when actual savings materialize and should be the basis of initiating future management changes to the program.

B. Use of the Other Transaction Authority

Language used for prototype other transactions needed improvement. These conditions exist because policy guidance for prototype other transactions was not issued. As a result, the Air Force paid \$1.5 million in profits and fees and the Navy and Air Force called six other transactions fixed priced when there was cost-sharing. In addition, the Military Departments used agreement language in 51 of 59 FYs 1997, 1999, and 2000 other transactions that did not require the delivery of a commercial prototype.

Background

Prototype Other Transactions. The National Defense Authorization Act of FY 1994, section 845, allows the use of the other transaction authority for prototype projects directly relevant to military systems. Section 845 was a 3-year pilot program that allowed the Defense Advanced Research Projects Agency to use the other transactions for prototype projects. The National Defense Authorization Act of FY 1997, section 804, extended the authority to the Secretaries of the Military Departments and other officials designated by the Secretary of Defense. The authority to use other transactions for prototypes has been extended several times, most recently by the Floyd D. Spence National Defense Authorization Act for FY 2001 to September 30, 2004. The COSSI program used the prototype other transaction authority to determine whether an existing commercial product or technology was applicable to a military system with the goal of reducing O&S costs. The prototype other transaction authority is limited to developing a prototype of the proposed system and subsequent production quantities must use a Federal Acquisition Regulation contract.

DoD Guidance for Using Other Transaction Prototype Agreements. The Under Secretary of Defense for Acquisition and Technology (now Acquisition, Technology, and Logistics) issued guidance on the use of prototype other transactions in a December 14, 1996, memorandum, “10 United States Code 2371, section 845, Authority to Carry Out Certain Prototype Projects.” The memorandum implemented statutory requirements, established reporting requirements, and emphasized the importance of good business sense and appropriate safeguards to protect the Government’s interest. In October 1997, the DDP issued a memorandum providing guidance for assigning identification numbers and collecting data for section 845 other transactions. On October 23, 1998, DDP issued a memorandum in response to Inspector General, DoD, to adjust payable milestone when necessary, ensure receipt of progress reports, and to ensure that final technical reports are sent to a central depository. The Under Secretary of Defense (Acquisition, Technology, and Logistics) issued a policy memorandum and Other Transactions Guide on December 20, 2001, providing guidance on the use of prototype other transactions.

COSSI Project Management

The Air Force paid profits and fees on five prototype agreements that included cost sharing, the Navy and Air Force awarded fixed-price COSSI agreements for the development of prototypes that included cost sharing, and the Military Departments issued COSSI agreements that used “support and stimulate” and “reasonable or best efforts” language in the agreements that is appropriate for research efforts but not for prototype development.

Profits and Fees. Air Force agreement officers inappropriately paid profits and fees to contractors in prototype other transactions that included cost sharing. Stage 1 COSSI agreements require that Government and industry share the cost in the development, manufacture, and delivery of the commercial prototype for a military system. Contractors are willing to share costs because of the potential future production contract if the commercial prototype is successful for military system introduction. The Air Force agreement officers paid \$1.5 million in profits or fees on four FY 1997 other transactions and one FY 1999 COSSI other transaction. For example, the Air Force issued a COSSI other transaction for \$2,088,457 with a Government cost share of \$1,485,190, a contractor cost share of \$603,267, and a fee of \$164,296 for the development of Mini-MUTES replacement processor demonstration. The contracting officer stated that the fee paid was adequate because the contractor was assuming some risk and that the guidance did not prohibit awarding a fee in cost share prototype other transactions. We believe that awarding profits or fees is inappropriate in cost share prototype other transactions because it mitigates the cost share contribution by the contractor(s). The Army and the Navy other transactions did not provide for profits or fees in their COSSI agreements.

The FYs 1997 and 1999 COSSI program solicitations were silent of the issue of Stage 1 profits and fees. The FY 2000/2001 COSSI program solicitation stated that the foregone profits and fees were considered an unacceptable cost share amount. The DDP guidance states that profit or fee is permitted for awardees of other transactions for prototype projects; but generally should not be permitted on cost share projects. However, we believe that awarding profits or fees is inappropriate for cost share other transactions. DDP should issue guidance that precludes the award of profits or fees, or identify when the award of profits and fees is permissible under a cost share other transaction.

Fixed-Price Other Transactions. The Navy and Air Force issued cost sharing other transactions under the COSSI program and called them fixed price. Fixed-price contracts or agreements establish a set price for acquiring items or services and do not include cost sharing. However, the COSSI Stage 1 program requires contractor(s) to share in the cost of the development, manufacture, and delivery of a commercial item or technology prototype to determine the prototype’s application to a fielded military system. At the time of an other transaction award, the cost and risk of the prototype development is not fully known, therefore, calling a cost sharing agreement fixed price appears to be inappropriate. The other transactions are fixed funded because both sides limited their financial exposure.

In FYs 1997, 1999, and 2000, Navy and Air Force agreement officers issued six firm-fixed-price or fixed-price-payable milestones other transactions. Those other transactions contained cost sharing and therefore should not have been considered fixed priced or payable because the total cost associated with the development of the prototype was not fully known. A cost share other transaction establishes a ratio of cost sharing that must be maintained to enforce the terms of the agreement. The cost of the prototype development is not known until after the development effort is complete; therefore, it is inappropriate for agreement officers to issue prototype other transactions with cost sharing that are considered fixed price. For example, the Naval Air Systems Command issued a COSSI other transaction for \$1,629,866, with the Navy cost share of \$1,142,900 and the contractor cost share of \$486,966, for the development of multi-functional control and display unit for the E-2C aircraft. The FY 1999 agreement states that the Navy will pay the contractor the Navy's agreed cost share regardless of the contractor's actual incurred costs; however, the cost associated with this ongoing effort is not fully known and the cost share percentage established in the agreement may not be maintained if the actual cost is either more or less than the negotiated \$1,629,866. The Army did not issue any fixed-price COSSI prototype other transactions.

Military Department agreement officers were not provided guidance that stated that agreement officers should not consider prototype other transactions as fixed-price agreements if the agreement includes cost sharing. It is appropriate for an acquisition to be fixed price if the risk is low. However, the concept of sharing risk is gone if costs and contractor expenditures are not fully known. Therefore, DDP needs to issue guidance that precludes calling an other transaction fixed price if there is cost sharing.

Agreement Language. The Military Department agreement officers issued COSSI prototype other transactions with inappropriate language for prototype development. COSSI other transactions are issued to develop, manufacture, and deliver a prototype for commercial item or technology for testing to determine the prototype's applicability to a fielded military system. However, 51 of 59 COSSI other transactions issued in FYs 1997, 1999, and 2000 stated that the principal purposes of the other transactions were to "support and stimulate" or to provide "reasonable or best effort" to qualify a product for insertion into fielded DoD military systems. The use of the terms "support and stimulate" and "reasonable or best effort" are used in assistance agreements and acquisitions when acquiring basic and applied research to advance a study of knowledge, with an end product being a research report discussing the results of the effort. COSSI is funded with engineering and manufacturing funds that are used to demonstrate systems capabilities. Since the end product of a COSSI other transaction is the delivery of a prototype for testing in a fielded military system, these terms are inappropriate for prototype agreements and could lead to confusion and disputes. Military Department agreement officers may be using these terms because they lack guidance and training on issuing prototype other transactions, and the agreements officers are using an other transaction template issued by Defense Advanced Research Project Agency for research agreements (as opposed to a prototype agreement). Therefore, DDP needs to issue guidance that addresses the use of the terms "support and stimulate" or "reasonable or best effort" for prototype other transactions.

Management Comments on the Finding and Audit Response

Management Comments. The DDP stated that the Under Secretary of Defense (Acquisition, Technology, and Logistics) issued an updated policy memorandum and Other Transactions Guide on December 20, 2001. The guide was developed in coordination with Inspector General, DoD, and successfully resolved identified areas of concern. In addition, the Other Transactions Guide incorporated changes to address preliminary Inspector General, DoD, issues identified during the COSSI audit. The DDP stated that, as a result, this part of the report should be eliminated or significantly revised because the new Other Transaction Guide obviates the need for the policy recommendations.

The DDP stated that Section 803 of the FY 2001 Authorization Act requires that at least one-third of the total cost of a prototype other transaction be provided by non-Federal parties. Thus by such a definition, a prototype other transaction is not fixed-price and the new other transaction guide recognizes that. The DDP also stated that cost and risk associated with prototype development can support the negotiation of a fixed-price agreement. Though the cost and risk is never fully known, it is possible to establish a fixed-price if the risk, cost, and effort is reasonably understood and can be realistically priced. The DDP stated that cost share could be implicit in a fixed-price agreement or could be structured to provide a given amount or other formula for cost share. The DDP stated that it is not appropriate to conclude that contractor contribution establishes a ratio of cost sharing that must be maintained.

Audit Response. The Inspector General, DoD, has issued several reports on prototype other transactions, as identified in the Prior Coverage section of this report. Those audit reports made numerous recommendations to issue prototype other transaction guidance and identified specific policy issue areas. During the COSSI audit, we discussed issues identified during the audit that needed additional guidance with the responsible DDP official. We commend the DDP for issuing the Other Transaction Guide and including changes recommended by this report. The Guide addresses the areas of concern as well as the requirements in section 803 of the Floyd D. Spence National Defense Authorization Act for FY 2001. We have modified the final report as suggested, where appropriate.

Recommendations, Management Comments, and Audit Response

B. We recommend that the Director, Defense Procurement, issue policy in DoD directives, instructions, or regulations for prototype other transactions that:

- 1. Identifies when it is appropriated to provide payment of profits and fees in a cost sharing agreement.**

Management Comments. DDP partially concurred, and stated that the Other Transaction Guide provides new guidance stating that profits or fees generally should not be permitted on cost-share other transaction. In addition, COSSI management officials agree that profit and fee payment is inappropriate for cost share projects and that future COSSI solicitations will clarify this issue.

2. Precludes calling other transactions fixed price when cost sharing is negotiated.

Management Comments. The DDP partially concurred, and stated that the Other Transaction Guide identifies that agreements that require cost sharing by definition are not fixed price. However, the DDP stated that a fixed price could be negotiated for a defined requirement short of the total estimated amount, without the agreements identifying a specific cost share amount or percentage from the contractor. The DDP stated that this is comparable to a Federal Acquisition Regulations contract where a firm fixed price is established for less than estimated value, thus implicitly recognizing cost share, but still regarding the contract as fixed price.

3. Clarifies the appropriate use of terms, “support and stimulate,” and “reasonable or best effort.”

Defense Procurement Comments. The DDP partially concurred, and stated that the Other Transaction Guide states that “support and stimulate” are inappropriate terms in prototype other transactions. The DDP also stated that the Other Transaction Guide states that “reasonable or best efforts” terms can be used toward a defined prototype project.

Appendix A. Audit Process

Scope and Methodology

Work Performed. We reviewed the overall management of the COSSI program as awarded under the other transaction authority. We evaluated 30 COSSI other transactions awarded in FY 1997 and 13 COSSI other transactions awarded in FY 1999 to determine whether the other transactions were achieving the COSSI objectives of introducing commercial technology and reducing O&S costs. We conducted a limited review of the 16 COSSI other transactions awarded in FY 2000.

We interviewed project managers, contracting officers, and contracting officer technical representatives for FY 1997 and FY 1999 COSSI projects. We examined documentation for each of the COSSI projects, including the basic agreements and modifications, proposals, and other contracting and project documentation. We did not question the proposals' technical merits or evaluate the contractor cost proposals and projected savings for validity. We did not use computer-processed data to perform this audit.

We performed this program results audit from March 2000 through September 2000, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. Our scope was limited in that we did not include tests of management controls. However, the conditions identified in this report are attributed to the lack of management controls over the COSSI program. The recommendations in finding A for establishing a management oversight program will correct the conditions cited in the report and help to ensure that the COSSI program will achieve its established objectives.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available on request.

DoD-Wide Corporate Level Government Performance and Results Act Coverage. In response to the Government Performance and Results Act, the Secretary of Defense annually establishes DoD-wide corporate level goals, subordinate performance goals, and performance measures. This report pertains to achievement of the following goal and subordinate performance goal.

- **FY 2000 DoD Corporate Level Goal 2:** Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs, and reengineer the Department to achieve a 21st century infrastructure. (00-DoD-2)

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- **FY 2000 Subordinate Performance Goal 2.4:** Meet combat forces' needs smarter and faster, with products and services that work better and cost less, by improving the efficiency of DoD acquisition processes. **(00-DoD-2.4)**

DoD Functional Area Reform Goals. DoD did not establish performance improvement reform objectives and goals for this functional area.

High-Risk Area. The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the defense acquisition management high-risk area.

Prior Coverage

During the last 5 years, the General Accounting Office and the Inspector General, DoD, issued five reports discussing other transactions. There have been no prior audits of the COSSI program. Unrestricted General Accounting Office reports can be accessed over the Internet at <http://www.gao.gov>. Unrestricted General Inspector General, DoD, reports can be accessed at <http://www.dodig.osd.mil/audit/reports>.

General Accounting Office

GAO Report No. NSIAD-00-33 (OSD Case No. 1944), "Acquisition Reform, DoD's Guidance on Using Section 845 Agreements Could be Improved," April 7, 2000

GAO Report No. NSIAD-96-11 (OSD Case No. 1074), "DoD Research, Acquiring Research by Nontraditional Means," March 29, 1996

Inspector General, DoD

Inspector General, DoD, Report No. D-2000-065, "Costs Charged to Other Transactions," December 27, 1999

Inspector General, DoD, Report No. 98-191, "Financial and Cost Aspects of Other Transactions," August 24, 1998

Inspector General, DoD, Report No. 97-114, "Award and Administration of Contracts, Grants, and Other Transactions Issued by Defense Advanced Research Projects Agency," March 28, 1997

Appendix B. Summary of Military Department Commercial Operations and Support Savings Initiative Projects

Army FY 1997

Dual Application Growth Rotor Blade Program (Agreement No. DAAB07-97-9-D020). The intent of this effort is to develop a qualified and functional Growth Rotor Blade for the Black Hawk helicopter. The Growth Rotor Blade project will also result in a wide chord composite main rotor blade for use on special mission Black Hawk helicopters as well as other commercial and military helicopters. The new composite blade will provide for greater design flexibility and is intended to achieve better aerodynamic performance, while at the same time reduce cost of ownership through low acquisition cost, increased reliability, and better maintainability.

Project Status: Agreement value \$8,972,774.
Cost share: DoD \$4,486,387/Contractor \$4,486,387.
Project start date September 19, 1997. Performance period 24 months.
Additional 9 months needed to complete project.
Stage 1 in process. Stage 2 budgeted.

Polymeric Tray Kit (Agreement No. DAAB07-97-9-D322). The intent of this effort is to provide the Army and Marine Corps with an alternative group-serving food container to the steel traycan currently being phased out.

Project Status: Agreement value \$572,363.
Cost share: DoD \$515,126/Contractor \$57,237.
Project start date September 29, 1997. Performance period 12 months.
Project was terminated.

Switchable Eyesafe Laser Rangefinder Designator (Agreement No. DAAB07-97-9-D615). The intent of this effort is to develop a prototype to replace the Kiowa Warrior's current laser beam system. The Switchable Eyesafe Laser Rangefinder Designator will contain state-of-the-art, diode pumped (all solid state), dual frequency laser designator/rangefinder based on commercial diode lasers, thermal electric cooler, non-linear optics, and electronics technology. This new design laser adds a switchable dual frequency capability to improve targeting designation performance.

Project Status: Agreement value \$5,893,834.
Cost share: DoD \$2,946,917/Contractor \$2,946,917.
Additional \$9,919,334 was added by various program offices.
Project start date September 12, 1997. Performance period 22 months.
Additional 11 months needed to complete project.
Stage 1 in process. Stage 2 not budgeted.

Dynamic Private Virtual Networks (Agreement No. DAAB07-97-9-E312)

The intent of this effort is to develop a method so that a single workstation can access various levels of information in either a stand-alone or a network mode of operation. This Dynamic Virtual Network will be developed at a low-cost, easy to install, and simple to operate method of converting from unclassified to classified operations. This system will be compatible with existing classified and unclassified systems and networks.

Project Status: Agreement value \$882,000.
Cost share: DoD \$413,500/Contractor \$468,500.
Project start date September 22, 1997. Performance period 18 months.
Additional 17 months needed to complete project. Project completed November 16, 2000.
Stage 1 complete. Stage 2 not budgeted and a decision was made not to proceed.

Heads Up Display (Agreement No. DAAB07-97-9-E313). The intent of this effort is to replace the Cathode Ray Tube display of the Aviator's Night Vision Imaging Systems/Heads Up Display with a flat panel display. The program will use commercial flat panel display technology to develop a display unit that is capable of demonstrating equivalent performance to the current display.

Project Status: Agreement value \$817,967.
Cost share: DoD \$764,241/Contractor \$53,726.
Project start date September 22, 1997. Performance period 15 months.
Additional 18 months needed to complete project.
Stage 1 in process. Stage 2 not budgeted.

Mainframe Computer Replacement for Guardrail Common Sensor (Agreement No. DAAB07-97-9-E314). The intent of this effort is to migrate the current main system computer software baseline to a commercial Open System Environment, allowing the software capability to be sent across platforms, thus enabling off the shelf processor upgrades and lowering the life-cycle cost of maintaining old hardware and software. This software will also serve as the baseline for the Aerial Common Sensor Intelligence Collection System development while reducing risk and adding flexibility to the current product improvements for the Guardrail Common Sensor fielded systems.

Project Status: Agreement value \$4,437,747.
Cost share: DoD \$4,026,235/Contractor \$411,512.
Project start date September 24, 1997. Performance period 18 months.
Additional 15 months needed to complete project. Stage 1 complete but due to technology obsolescence the project did not transition to a Stage 2 FAR procurement.

Advanced Flight Control Computer (Agreement No. DAAB07-97-9-E315).

The intent of this effort is to use existing commercial processes/architectures to provide a Form-Fit-Function-Interface replacement of the Black Hawk Stability Augmentation System/Flight Path Stabilization computer while providing significant operation and support savings. This proposed computer will be designed as a direct replacement unit, thus, it will interface directly to the existing computer mounting tray and electrical connectors already on the aircraft. No aircraft modifications are required for the installation and use of this computer.

Project Status: Agreement value \$3,817,725.

Cost share: DoD \$3,122,725/Contractor \$695,000.

Project start date September 23, 1997. Performance period 22 months.

Additional 11 months needed to complete project.

Stage 1 in process. Stage 2 budgeted.

Affordable Apache Rotor System (Agreement No. DAAB07-97-9-J046). The intent of this effort is to use best commercial processes and practices to produce a new rotor system for the current Apache rotor system that will meet affordability goals and improve performance for future, heavier helicopter versions. This is to be accomplished using the design and processes of the fiberglass rotor blade commercial helicopter.

Project Status: Agreement value \$22,410,378.

Cost share: DoD \$11,205,189/Contractor \$11,205,189.

Project start date September 30, 1997. Performance period 36 months.

Stage 1 in process. Stage 2 budgeted.

Composite Semitrailer Van (Agreement No. DAAB07-97-9-J047). The intent of this effort is to provide a replacement for the semitrailer van systems being retired. This project will cost less to purchase, cost less to operate, and weighs less than the steel chassis and aluminum van body systems being retired.

Project Status: Agreement value \$1,600,000.

Cost share: DoD \$900,000/Contractor \$700,000.

Project start date September 18, 1997. Performance period 18 months.

Additional 21 months needed to complete project. Project was terminated in December 2000.

Stage 1 complete. Stage 2 was not budgeted.

Modification to the Movement Tracking System Satellite Communication System (Agreement No. DAAB07-97-9-J048). The intent of this effort is to develop a Movement Tracking System terminal that is capable of operating over commercial satellite systems and will permit world-wide tracking and two-way data communications. This program will expand the network management functionality to enable multiple echelons of DoD personnel to obtain access to the information. This program will also improve the application interfaces to the satellite terminals to enable the DoD to interface new and different sensor and other electronic technologies. The development was expanded in FY 1999 to miniaturize the Movement Tracking System into a hand-held unit.

Project Status: Agreement value \$3,270,050.
Cost share: DoD \$1,635,025/Contractor \$1,635,025.
Additional \$1,078,790 was added by the program office.
Project start date September 24, 1997. Performance period 19 months.
Additional 2 months needed to complete project.
Stage 2 in process, a FAR Part 12, Acquisition of Commercial Items contract was issued.

Army FY 1999

A Common Interoperable Integrated Mechanical Diagnostics/Health Usage Management System (Agreement No. DAAH10-99-9-0001). The intent of this effort is to determine the cost benefits/deficits of the health usage management system installed on the H-60 helicopter fleet. In addition, the effort is to evaluate the interoperability with the equivalent Navy system and the ground station supporting the Sikorsky civil fleet.

Project Status: Agreement value \$5,646,592.
Cost share: DoD \$4,128,694/Contractor \$1,517,898.
Project start date August 30, 1999. Performance period 24 months.
Stage 1 in process. Stage 2 not budgeted.

The Improved Remotely Monitored Battlefielded Sensor Systems (I-REMBASS) Repeater (Agreement No. DAAB07-99-9-D286). The intent of this effort is to provide a state-of-the-art Repeater, capable of integration within existing sensor systems, yet containing the design flexibility to support the advanced communications requirements of future systems.

Project Status: Agreement value \$655,508.
Cost share: DoD \$458,855/Contractor \$196,653.
Project start date August 20, 1999. Performance period 12 months.
Stage 1 in process. Stage 2 budgeted.

Sand Erosion Resistance Kits for Auxiliary Power Unit on Apache/Longbow Helicopter (Agreement No. DAAB07-99-9-K762). The intent of this effort is to develop and adapt existing sand erosion resistance components into the auxiliary power unit on the Apache/Longbow helicopter. The components will reduce the amount of sand and dust ingested by the auxiliary power unit. The increase in operational life of the auxiliary power unit will be accomplished by adapting a scaled version of an existing commercial inlet particle separator and ceramic nozzle.

Project Status: Agreement value \$1,997,160.
Cost share: DoD \$1,497,870/Contractor \$499,290.
Project start date September 10, 1999. Performance period 24 months.
Stage 1 in process. Stage 2 not budgeted.

Army FY 2000

Install, Integrate, and Support Commercial-off-the-Shelf Nondestructive Inspection for Kiowa Warrior (Agreement No. DAAH10-00-9-0001). The intent of this effort is to replace the avionics/crew station multifunctional display, integrated stores management system, and infra-red suppressor on the Kiowa Warrior aircraft. This will increase performance, flight safety, and range of the aircraft.

Project Status: Agreement value \$5,559,264.
Cost share: DoD \$4,169,448/Contractor \$1,389,816.
Project start date August 30, 1999. Performance period 24 months.

Guardrail Common Sensor Replacement Receivers (Agreement No. DAAB07-00-9-D319). The intent of this effort is to replace the current guardrail receivers with maintainable, commercial-off-the-shelf receivers. The replacement receivers will reduce the payload weight, require less power, and increase frequency coverage above the current limit of the existing receivers.

Project Status: Agreement value \$882,399.
Cost share: DoD \$666,614/Contractor \$215,785.
Project start date June 16, 2000. Performance period 18 months.

Portable Engine Test Cell Capability for CH-57 and MH-57 Helicopters (Agreement No. DAAH01-00-3-R001). The intent of this effort is to provide a turn-key portable test solution for testing installed turbine engines in the CH-57 and MH-47 helicopters. The modified system will satisfy the current requirement for engine pass-fail decisions and add fault isolation of engine components.

Project Status: Agreement value \$553,000.
Cost share: DoD \$390,700/Contractor \$162,300.
Project start date October 5, 1999. Performance period 16 months.

Low Cost First and Second Stage Compressor Blades for the AGT 1500 Engine (DAAE07-00-9-0002). The objective is to achieve significant life-cycle cost improvements in the AGT 1500 engine by using low cost and commercially available technology through the use of metal injection molding technology and an aqueous binder system.

Project Status: Agreement value \$2,182,927.
Cost share: DoD \$1,637,195/Contractor \$545,732.
Project start date September 29, 2000. Performance period 26 months.

Navy FY 1997

Helicopter Usage Monitoring and Diagnostic System (Agreement No. N00019-97-H-0152). The intent of this effort is to adapt a commercial, open architecture, on-board Integrated Mechanical Diagnostics and ground-based usage and maintenance management software to the specific needs of the Navy, Marine Corps, and Coast Guard for the SH-60 and CH-53E helicopters.

Project Status: Agreement value \$18,041,924.
Cost share: DoD \$9,020,962/Contractor \$9,020,962.
Project start date July 16, 1997. Performance period 24 months.
Over 16 additional months needed to complete project.
Stage 1 in process for the SH-60 and stage 1 completed in January 2001 for the CH-53. Stage 2 budgeted, and the CH-53E portion converted to a FAR Part 12 contract.

Commercially Based Processing for E2C/C2A (also known as the Blade Inspector Kit for E2C/C2A) (Agreement No. N00019-97-H-0164). The intent of this effort is to prototype a verifiable non-developmental item inspection tool, the Blade Inspection Kit. This prototype will use infrared and digital imagery technology to detect faulty blades and predict over time, which blades exhibit characteristics known to cause failure.

Project Status: Agreement value \$266,194.
Cost share: DoD \$199,645/Contractor \$66,549.
Project start date September 18, 1997. Performance period 5 months.
Additional 5 months needed to complete project.
Stage 1 complete. Stage 2 not planned or budgeted.

Military Qualification of a High Reliability, Light-Weight 24V/30Ah Aircraft Battery (Agreement No. N00019-97-H-0172). The intent of this effort is to replace the existing battery with a high reliability, light-weight 24V/30Ah battery to be used in the C-130, P-3, and T-37 aircraft. This will increase the battery life to 3 years (a 50 percent increase over presently used batteries) and decrease the battery weight by 25 percent.

Project Status: Agreement value \$373,845.
Cost share: DoD \$261,692/Contractor \$112,153.
Project start date September 25, 1997. Performance period 20 months.
Additional 25 months needed to complete project.
Stage 1 in process. Stage 2 budgeted.

Commercially Based Processing for F/A-18C/D (Agreement No. N00019-97-H-0173). The intent of this effort is to achieve a significant reduction in annual software maintenance costs on the F/A-18C/D by replacing the current assembly language-based software in the mission computer with software written in a commercially based, object-oriented, high-order language that is easier to maintain.

Project Status: Agreement value \$36,103,374.
Cost share: DoD \$13,957,059/ Contractor \$22,146,315.
Project start date September 22, 1997. Performance period 36 months.
Stage 1 in process. Stage 2 not budgeted.

Acoustic Emission and Ultrasonic Testing for Periodic Inspection of Pneumatic Pressure Vessels (Agreement No. N00024-97-H-4194). The intent of this effort will adapt the existing commercial SPARTAN 2000 Acoustic Emission and Ultrasonic Testing system to military application through the nonrecurring engineering effort necessary to modify the existing hardware and software, develop system integration, and conduct qualification testing.

Project Status: Agreement value \$588,530.
Cost share: DoD \$294,265/Contractor \$294,265.
Project start date August 1, 1997. Performance period 18 months.
Additional 5 months needed to complete project.
Stage 1 complete. Stage 2 not budgeted.

Advanced Digital/Logistic Integrated Data Capture and Analysis (Agreement No. N00024-97-H-4204). The intent of this effort will result in the development of a prototype kit that will automate the current manual process of acquiring detailed existing shipboard arrangements, conditions, interference and logistics data to expedite engineering changes and modernization. The primary technology area is in data capture through laser scanning. This system will attempt to satisfy customer requirements for concept development, equipment maintenance, and interpretability with exiting data repositories.

Project Status: Agreement value \$7,088,600.
Cost share: DoD \$5,128,199/Contractor \$1,960,401.
Additional \$3,825,000 was added with a congressional plus-up award.
Project start date September 8, 1997. Performance period 36 months.
Additional 3 months needed to complete project.
Stage 1 in process. Stage 2 not budgeted.

Reconfigurable Logic Engine for Legacy Systems (Agreement No. N00024-97-H-5247). The intent of this effort will replace the Standard Electronic Modules in the AN/SPS-67 radar system. The Reconfigurable Logic Engine-A will reduce the number of unique boards in a system whereas the Reconfigurable Logic Engine VME-bus will reduce the total number of boards in a system.

Project Status: Agreement value \$2,276,825.
Cost share: DoD \$1,127,739/Contractor \$1,149,086.
Project start date July 10, 1997. Performance period 24 months.
Stage 1 complete. Stage 2 not planned or budgeted.

Sonar Receiver Set AN/BQR-22A COTS Insertion (Agreement No. N00024-97-H-6244). The intent of this effort is to upgrade the AN/BQR-22A sonar receiver set by replacing the current customer hardware and software in submarines with commercial-off-the-shelf hardware and interfaces and open architecture software.

Project Status: Agreement value \$4,104,930.
Cost share: DoD \$3,104,930/Contractor \$1,000,000.
Project start date July 23, 1997. Performance period 18 months.
Additional 20 months needed to complete project.
Stage 1 in process. Stage 2 not planned or budgeted.

Lithium Ion Polymer Batteries for Navy Underwater Use (Agreement No. N00024-97-H-6398). The intent of this effort is to develop Lithium Ion Polymer Batteries to replace existing zinc-silver oxide batteries used on the MK-30 Training Target System, the MK-8 Seal Delivery Vehicle, and the Advanced Seal Delivery System which will last 5 times longer.

Project Status: Agreement value \$5,897,462.
Cost share: DoD \$3,449,639/Contractor \$2,447,823.
Project start date August 29, 1997. Performance period 24 months.
Additional 17 months needed to complete project.
Stage 1 in process. Stage 2 not budgeted.

Cutting Cost with Tivoli's Integrated Systems Management Tools (Agreement No. N00039-97-C-8001). The intent of this effort will design, implement, and test web-based technologies on Joint Maritime Command Information Systems workstations. This integrated configuration management approach for software maintenance will reduce operation and support cost for the Navy.

Project Status: Agreement value \$2,934,568.
Cost share: DoD \$2,057,000/ Contractor \$877,568.
Project start date July 25, 1997. Performance period 12 months.
Stage 1 complete. Stage 2 not planned or budgeted.

FltCast Program (Agreement No. N00039-97-C-8002). The intent of this effort will develop a prototype system to disseminate information quickly and efficiently throughout the fleet using the Internet with the objective of providing individual users with the ability to selectively filter and update required information.

Project Status: Agreement value \$239,976.
Cost share: DoD \$179,976/ Contractor \$60,000.
Project start date September 4, 1997. Performance period 9 months.
Stage 1 complete. Stage 2 not planned or budgeted.

USMC Signal Intelligence/Electronic Warfare Systems Interoperability (Agreement No. M67854-97-C-2115). The intent of this effort will use a commercial communications gateway to increase the interoperability of four current Marine Corps systems.

Project Status: Agreement value \$3,799,090.
Cost share: DoD \$1,864,540/Contractor \$1,934,550.
Additional \$40,311 was added by the program office.
Project start date August 15, 1997. Performance period 24 months.
Stage 1 complete. Stage 2 not budgeted.

Laser Cladding Applications in the Operation and Support of Land Based Vehicles (Agreement No. M67854-97-C-2116). The intent of this effort is to adapt the commercially proven laser beam cladding process for the refurbishment of components of Assault Amphibious Vehicles, Logistics Vehicle Systems, and other Marine Corps land-based vehicles.

Project Status: Agreement value \$557,968.
Cost share: DoD \$322,855/Contractor \$235,113.
Project start date August 20, 1997. Performance period 12 months.
Additional 4 months needed to complete project.
Stage 1 complete. Stage 2 not budgeted.

Portable Engine Test Cell Capability for H-53 Series and H-46 Series Helicopters (Agreement No. M67854-97-C-2117). The intent of this effort is to develop a system that can instantly monitor the engines of the H-53 and H-46 helicopters while in flight. This project will attempt to automate the analysis of engine failures through a system called JETCAL 2000. This will eliminate the unnecessary removal of engines that are operationally fine.

Project Status: Agreement value \$403,000.
Cost share: DoD \$359,000/Contractor \$44,000.
Project start date September 1, 1997. Performance period 16 months.
Additional 15 months needed to complete project.
Stage 1 in process. Stage 2 not budgeted.

Navy FY 1999

Life Enhancement of the F405 Compressor Drum Using Modern Commercial Design Tools (Agreement No. N00019-99-9-1493). The intent of this effort is to double the useful life of the current High Pressure Compressor drum with the use of modern commercial design tools.

Project Status: Agreement value \$1,853,000.
Cost share: DoD \$1,360,000/Contractor \$493,000.
Project start date June 22, 1999. Performance period 18 months.
Stage 1 in process. Stage 2 budgeted.

Multi Functional Control and Display Unit for the E-2C Aircraft (Agreement No. N00019-99-9-1546). The intent of this effort is to replace the existing multi functional control and display unit for the E-2C aircraft with commercial-off-the-shelf technology. System-level performance will be significantly enhanced.

Project Status: Agreement value \$1,629,866.
Cost share: DoD \$1,142,900/Contractor \$486,966.
Project start date September 20, 1999. Performance period 18 months.
Stage 1 in process. Stage 2 not budgeted.

Commercially Based Processing for the T-45TS (Agreement No. N00019-99-9-1662). The intent of this effort is to replace the mission display processor that resides on the T-45 training helicopter with commercial-off-the-shelf technology. The new commercially based mission display processor will avoid technology obsolescence issues and be much easier to maintain.

Project Status: Agreement value \$9,807,799.
Cost share: DoD \$6,933,234/Contractor \$2,874,565.
Project start date September 23, 1999. Performance period 21 months.
Stage 1 in process. Stage 2 not budgeted.

Helicopter Usage Monitoring (Agreement No. N00019-97-H-0152/P00002). The intent of this effort is to adapt a commercial, open architecture, on-board Integrated Mechanical Diagnostics and ground-based usage and maintenance management software for the H-1 helicopters. The H-1 helicopter platform was added to the H-53 and H-60 effort.

Project Status: Agreement value \$8,586,730.
Cost share: DoD \$6,440,047/Contractor \$2,146,683.
Project start date September 30, 1999. Performance period 36 months.
Stage 1 in process. Stage 2 budgeted.

Dock Landing Ship (LSD) 41/49 Class Fuel and Engine Maintenance Savings Initiative (Agreement No. N00024-99-2-4161). The intent of this effort is to produce more efficient propeller blades and a software-run engine that will give the LSD 41 class and LSD 49 class of ships a form of cruise control and reduce fuel consumption.

Project Status: Agreement value \$658,825.
Cost share: DoD \$329,412/Contractor \$329,413.
Project start date September 30, 1999. Performance period 27 months.
Stage 1 in process. Stage 2 not budgeted.

Navy FY 2000

Air Start Kit 200 (Agreement No. N68335-00-9-0339). The intent of this effort is to adapt a commercially available gas turbine-based aircraft, air start unit design to create an air start module which will meet the dimensional, weight, and environmental requirements of the Navy's shipboard and land-based air start systems.

Project Status: Agreement value \$3,252,335.
Cost share: DoD \$2,439,250/Contractor \$813,085.
Project start date April 19, 2000. Performance period 25 months.

Electronic Propeller Control System Upgrade (Agreement No. N00019-00-9-0314). The intent of this effort is to upgrade the P-3 aircraft propeller control systems from mechanical to digital electronic controls. This will improve propeller control speed and accuracy.

Project Status: Agreement value \$6,876,658.
Cost share: DoD \$4,813,661/Contractor \$2,062,997.
Project start date May 23, 2000. Performance period 24 months.

P-3 Maintainer's Electronic Performance Support (Agreement No. N00019-00-9-0315). The intent of this effort is to develop a single, portable Maintainer's Electronic Performance Support System that integrates a variety of key Navy information resources needed by workers who maintain the P-3 aircraft. This system will be designed so that maintenance workers can access it while on the flight-line and refer to its information resources by voice activated commands. Information will be accessible by a wireless communications link.

Project Status: Agreement value \$2,000,000.
Cost share: DoD \$1,500,000/Contractor \$500,000.
Project start date May 31, 2000. Performance period 19 months.

First Mate Ship Hull Cleaner (Agreement No. N00024-00-9-4068). The intent of this effort is to expand the capability for removing paint, rust, and marine growth from the outer hull bottom surfaces of naval ships. The First Mate ship hull cleaning system will increase productivity and reliability.

Project Status: Agreement value \$255,000.
Cost share: DoD \$190,000/Contractor \$65,000.
Project start date March 20, 2000. Performance period 9 months.

Acoustic Emission for Periodic Inspection of Composite Pressure Vessels (N00024-00-9-4136 [the original agreement number was N00024-00-0-4122 but was subsequently changed]). Tests of composite pressure vessels using standard laboratory type AE instrumentation identified a variety of issues to facilitate use of the AE method. This effort will add to the knowledge already available for improvements to existing instrumentation.

Project Status: Agreement value \$741,350
Cost share: DoD \$556,012/Contractor \$185,338
Project start date August 16, 2000. Performance period 18 months.

Pinpoint Test System (Agreement No. N66604-00-9-3110). The intent of this effort is to redesign the existing workstation with greater diagnostics capabilities. This new Pinpoint system will allow the Navy to have a more accurate, efficient, and capable method of finding a fault on a circuit board so that the board can be repaired and put back into service within a timely manner.

Project Status: Agreement value \$817,764.
Cost share: DoD \$515,191/Contractor \$302,573.
Project start date May 23, 2000. Performance period 9 months.

Unattended Paint Removal and Application System (Agreement No. N00024-00-9-4082). The intent of this effort is to adapt commercial-off-the-shelf products to build an environmentally controlled, unattended paint removal and application system that prevents the release of hazardous

compounds into the environment. This system will address the critical environmental considerations and safety issues associated with removing and applying paint to ship surfaces.

Project Status: Agreement value \$3,727,959.

Cost share: DoD \$2,721,000/Contractor \$1,006,959.

Project start date June 12, 2000. Performance period 17 months.

Network Centric METOC (Meteorological/Oceanographic) Device (Agreement No. N00039-00-9-4000). Develop, demonstrate, and commercialize the “thin client” to meet the METOC requirements to reduce software development, installation, maintenance, and upgrade costs for Navy (and other Government) applications.

Project Status: Agreement value \$275,000.

Cost share: DoD \$156,596/Contractor \$118,404.

Project start date November 11, 1999. Performance period unknown

CASS Upgrade to Commercial Software (Agreement No. N68335-00-9-0442). The intent of this effort will integrate and demonstrate commercial software upgrade to the Consolidated Automated Support System. This upgrade will provide greater flexibility to the warfighter.

Project Status: Agreement value \$3,832,742.

Cost share: DoD \$2,762,971/Contractor \$1,069,771.

Project start date August 9, 2000. Performance period 24 months.

Air Force FY 1997

Mini-Multiple Threat Emitter Simulation Replacement Processor (Agreement No. F04606-97-4-0001). The intent of this effort is to add advanced threat capabilities to the existing Mini-Multiple threat emitter radar simulator. A replacement commercial-off-the-shelf processor and bus will increase mission effectiveness and provide capabilities to meet future system growth.

Project Status: Agreement value \$2,088,457.

Cost share: DoD \$1,485,190/ Contractor \$603,267.

Project start date September 11, 1997. Performance period 14 months.

Stage 2 in process, a FAR Part 15, Contract by Negotiation contract was issued.

Data Distribution Kits for Command Centers (Agreement No. F04606-97-4-0002). The intent of this effort is to develop a replacement of the data distribution networks for mobile consolidated command centers with commercial-off-the-shelf products. This new communication system will provide enduring mobile command centers during pre-, trans-, and post-attack phases of nuclear war.

Project Status: Agreement value \$6,258,485.
Cost share: DoD \$4,011,463/Contractor \$2,247,022.
Project start date September 15, 1997. Performance period 18 months.
Additional 3 months needed to complete project.
Stage 2 in process, a FAR Part 12, Acquisition of Commercial Items contract was issued.

Versa Module Europa Contingency Antenna Position Control Unit (Agreement No. F19628-97-4-0001). The intent of this effort is to upgrade the existing antenna controller in a communications system with commercial-off-the-shelf technology. This open architecture electronics will allow easy, cost-effective, future technology insertions with increased reliability and maintainability.

Project Status: Agreement value \$322,926.
Cost share: DoD \$158,125/ Contractor \$164,801.
Additional \$486,000 was added by the program office.
Project start date September 23, 1997. Performance period 19 months.
Additional 18 months needed to complete project.
Stage 1 complete. Stage 2 production, FAR Part 15, Contract by Negotiation will be issued.

Commercially Based Processing for the F-15E (Agreement No. F33657-97-9-2058). The intent of this effort is to replace the existing Multipurpose Display Processor with a commercial-off-the-shelf Advanced Display Core Processor. This new processor will maintain the functionality of the existing processor while increasing throughput and memory function. The Advanced Display Core Processor will improve reliability and enable more efficient software production.

Project Status: Agreement value \$32,261,769.
Cost share: DoD \$10,361,387/ Contractor \$21,900,382.
Project start date September 15, 1997. Performance period 36 months.
Stage 1 in process. Stage 2 budgeted.

F-16 C/D F110 Engine Ejector Nozzle (Agreement No. F33657-97-4-2059). The intent of this effort is to replace the existing engine ejector nozzle. The replacement engine ejector nozzle will improve cooling effectiveness and will increase the life of the hardware by more than four times.

Project Status: Agreement value \$7,549,100.
Cost share: DoD \$6,640,500/Contractor \$908,600.
Project start date September 17, 1997. Performance period 27 months.
Additional 12 months needed to complete project.
Stage 1 in process. Stage 2 not budgeted.

Discontinuously Reinforced Aluminum (Agreement No. F42620-97-4-0001). The intent of this effort is to scale-up and reduce the cost of the discontinuously reinforced aluminum sheet for the F-16 aircraft. This wider aluminum sheet will be used to manufacture the ventral fins and fuel access covers on the F-16 aircraft.

Project Status: Agreement value \$2,341,843.
Cost share: DoD \$2,169,952/ Contractor \$171,891.
Project start date August 15, 1997. Performance period 18 months.
Additional 12 months needed to complete project.
Stage 1 is complete but did not result in a FAR contract. This project proved a technology capability of producing a product more efficiently and will result in prime contractors acquiring the product from the contractor in a subcontractor/vendor relationship.

Air Force FY 1999

Low Altitude Navigation and Targeting Infrared for Night Support Equipment Mid-Life Upgrade (Agreement No. F09603-99-9-0001). The intent of this effort is to provide automatic test equipment for testing avionics on aircraft targeting and navigation systems. Commercial-off-the-shelf equipment will provide for the upgrade of the current system. The upgraded system will provide improved reliability, maintainability, and production efficiency.

Project Status: Agreement value \$4,999,599.
Cost share: DoD \$3,003,763/Contractor \$1,995,836.
Project start date July 27, 1999. Performance period 15 months.
Stage 1 in process. Stage 2 budgeted.

Menu Driven Intercommunication System Control Panel Project (Agreement No. F33657-99-9-2033). The intent of this effort is to replace the existing Intercommunication System Control Panel with commercial technology. The new control panel will have a more generalized design and will make future upgrades and modifications to the C-17 aircraft independent of the panel. Increased capacity and expansion of memory will result.

Project Status: Agreement value \$2,422,267.
Cost share: DoD \$1,816,700/Contractor \$605,567.
Project start date September 24, 1999. Performance period 18 months.
Stage 1 in process. Stage 2 budgeted.

F-16 Heads Up Display Electronic Unit Replacement (Agreement No. F33657-99-9-2035). The intent of this effort to develop a form, fit, and function interchangeable electronic unit for the F-16 aircraft Heads Up Display system. The new electronic unit will eliminate current obsolescence from the unit.

Project Status: Agreement value \$5,559,152.
Cost share: DoD \$2,779,576/ Contractor \$2,779,576.
Project start date August 16, 1999. Performance period 20 months.
Stage 1 in process. Stage 2 not budgeted.

Automated Data Acquisition System for Jet Engine Testing (Agreement No. F41608-99-9-0288). The intent of this effort is to incorporate intelligent commercial off the shelf instrumentation technologies into jet engine test systems. This new data acquisition system will replace the current systems and will accelerate the data acquisition process. This new system will reduce total test time, fuel consumption, and manpower requirements, while providing a positive environmental impact.

Project Status: Agreement value \$2,212,950.
Cost share: DoD \$1,562,950/Contractor \$650,000.
Project start date June 11, 1999. Performance period 18 months.
Stage 1 in process. Stage 2 budgeted.

Internet Based Information Architecture for Automatic Test System (Agreement No. F41608-99-9-2205). The intent of this effort is to implement commercial-off-the-shelf technology to improve the automatic test system information management process. This Internet-based system will be an on-line, multi client/server application that will give the control point user the ability to view, add, delete, and revise many types of information while providing fielded users with a common information base.

Project Status: Agreement value \$1,769,522.
Cost share: DoD \$1,250,000/Contractor \$519,522.
Project start date September 10, 1999. Performance period 10 months.
Stage 1 in process. Stage 2 budgeted.

Air Force FY 2000

F-16 Improved Avionics Intermediate Shop Digital Signal Processing Replacement (Agreement No. F33657-99-9-2036). The intent of this effort is to introduce a more cost-effective radio frequency testing capability for the F-16 Improved Avionics Intermediate Shop Automatic Test Equipment. The Digital Signal Processing replacement will allow increased capabilities through software updates rather than hardware changes.

Project Status: Agreement value \$1,720,210. Cost share:
DoD \$1,270,210/Contractor \$450,000.
Project start date March 23, 2000. Performance period 22 months.

Commercially Based Pneumatic Weapon Ejection System for the F-15E (Agreement No. F33657-00-9-2055). The intent of this effort is to replace the F-15E suite of bomb racks with a commercially based Pneumatic Weapon Ejection System. This new weapon carriage and release system will match the

specified performance of the existing bomb racks while eliminating software changes, reducing flight test requirements, reducing hazardous waste products, and improving weapon release characteristics.

Project Status: Agreement value \$8,630,652.

Cost share: DoD \$5,807,059/Contractor \$2,823,593.

Project start date April 24, 2000. Performance period 27 months.

APG-68 Array Processor Modernization Kit (Agreement No. F42620-00-9-0001). The intent of this effort is to modify the existing array processor with commercial-off-the-shelf equipment while matching or increasing the function and performance of the existing radar system. The conversion of the existing closed architecture to an open system will make it possible to cost-effectively add cost-effective capabilities to meet future requirements.

Project Status: Agreement value \$9,951,273.

Cost share: DoD \$6,000,000/Contractor \$3,951,273.

Project start date March 16, 2000. Performance period 18 months.

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI³
(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Army FY 1997 COSSI Projects					
Dual application growth rotor blade	DAAB07-97-9-D020	0	0	\$ 2,600	\$ 2,600
Polymeric tray kit	DAAB07-97-9-D322		Terminated		
Switchable eyesafe laser rangefinder designator	DAAB07-97-9-D615	\$ 48,158	\$ 27,846	12,099	88,103
Dynamic private virtual networks	DAAB07-97-9-E312	137,250	137,250	183,000	457,500
Heads-up display	DAAB07-97-9-E313	0	381	14,394	14,775
Mainframe computer replacement for guardrail common sensor	DAAB07-97-9-E314	3,899	3,899	5,199	12,997
Advanced flight control computer	DAAB07-97-9-E315	62,450	154,440	336,540	553,430
Affordable Apache rotor system	DAAB07-97-9-J046	98,700	98,700	131,600	329,000
Composite semitrailer van	DAAB07-97-9-J047	4,461	4,461	5,948	14,870
Modification to the movement tracking system satellite communication system	DAAB07-97-9-J048	40,400	283,700	495,800	819,900
Total		\$395,318	\$710,677	\$1,187,180	\$2,293,175
Percent of totals		17	31	52	100

³ Commercial Operations and Support Savings Initiative

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)
(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Army FY 1999 COSSI Projects					
Common interoperable integrated mechanical diagnostics/health usage management system	DAAH10-99-9-0001	\$ 787	\$ 787	\$ 578	\$ 2,152
The improved remotely monitored battlefield sensor systems repeater	DAAB07-99-9-D286	1,114	993	0	2,107
Sand erosion resistance kits for model 36-155 APU on Apache/Longbow helicopter	DAAB07-99-9-K762	25,113	11,430	13,218	49,761
Total		\$ 27,014	\$13,210	\$13,796	\$ 54,020
Percent of totals		50	24	26	100
Army FY 2000 COSSI Projects					
Install, integrate, and support commercial off the shelf nondestructive inspection for Kiowa Warrior	DAAH10-00-9-0001	105,335	39,902	12,789	158,026
Guardrail common sensor replacement receivers	DAAB07-00-9-D319	3,289	3,289	4,386	10,964
Portable engine test cell capability for CH-47 and MH-47 helicopters	DAAH01-00-3-R001	5,417	4,872	5,741	16,030
Total		\$114,041	\$48,063	\$22,916	\$185,020
Percent of totals		62	26	12	100

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)
(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Navy FY 1997 COSSI Projects					
Helicopter usage monitoring and diagnostic system	N00019-97-H-0152	\$79,000	\$358,000	\$709,000	\$1,146,000
Commercially based processing for E2C/C2A	N00019-97-H-0164	53	2,175	2,900	5,128
Military qualification of a high reliability, light-weight 24V/30AH aircraft battery	N00019-97-H-0172	1,100	3,126	4,168	8,394
Commercially based processing for F/A 18C/D	N00019-97-H-0173	14,800	117,700	115,500	248,000
Acoustic emission and ultrasonic testing for periodic inspection of pneumatic pressure vessels	N00024-97-H-4194	11,820	11,820	15,760	39,400
Advanced digital/logistic integrated data capture and analysis	N00024-97-H-4204	9,750	4,910	4,340	19,000
Reconfigurable logic engine for legacy systems	N00024-97-H-5247	2,400	2,130	2,840	7,370
Sonar receiver set AN/BQR-22A commercial off the shelf insertion	N00024-97-H-6244	(1,360)	5,240	6,633	10,513
Lithium ion polymer batteries for Navy underwater usage	N00024-97-H-6398	\$ 2,549	\$21,662	\$ 35,822	\$ 60,033

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)
(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Navy FY 1997 COSSI Projects (Cont'd)					
Cutting cost with Tivoli's integrated systems management tools	N00039-97-C-8001	\$ 7,882	\$ 8,399	0	\$ 16,281
FltCast program	N00039-97-C-8002	6,927	8,499	\$ 12,570	27,996
Marine Corps signal intelligence/ electronic warfare systems interoperability	M67854-97-C-2115	27,063	6,030	0	33,093
Laser cladding applications in the operation and support of land based vehicles	M67854-97-C-2116	2,457	1,880	0	4,337
Portable engine test cell capability for H-53 series & H-46 series helicopters	M67854-97-C-2117	7,900	17,000	20,600	45,500
Total		\$172,341	\$568,571	\$930,133	\$1,671,045
Percent of totals		10	34	56	100

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)
(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Navy FY 1999 COSSI Projects					
Life enhancement of the F405 compressor drum using modern commercial design tools	N00019-99-9-1493	0	\$ 21,041	\$ 9,095	\$ 30,136
Multifunctional control and display unit for the E-2C aircraft	N00019-99-9-1546	\$ 383	3,573	5,345	9,301
Commercially based processing for the T-45TS	N00019-99-9-1662	6,769	10,244	30,279	47,292
Helicopter usage monitoring	N00019-97-H-0152/P00002	3,971	75,441	190,588	270,000
Dock landing ship 41/49 class fuel and engine maintenance savings initiative	N00024-99-2-4161	1,925	3,825	4,540	10,290
Total		\$ 13,048	\$ 114,124	\$ 239,847	\$ 367,019
Percent of totals		4	31	65	100
Navy FY 2000 COSSI Projects					
Air start kit 200	N68335-00-9-0339	8,618	49,159	43,046	100,823
Electronic propeller control system upgrade	N00019-00-9-0314	0	11,867	43,290	55,157
P-3 maintainer's electronic performance support	N00019-00-9-0315	400,502	2,693,956	3,272,823	6,367,281

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)

(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	Cost Savings <u>4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Navy FY 2000 COSSI Projects (Cont'd)					
First mate ship hull cleaner	N00024-00-9-4068	\$ 1,682	\$ 1,365	\$ 1,886	\$ 4,933
Pinpoint test system	N66604-00-9-3110	4,482	14,510	30,666	49,658
Unattended paint removal and application system	N00024-00-9-4082	4,028	5,149	7,507	16,684
Consolidated automated support system upgrade to commercial software	N68335-001-9-0442	10,233	4,967	4,267	19,467
Total		\$429,545	\$2,780,973	\$3,403,485	\$6,614,003
Percent of totals		6	42	52	100

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)
(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Air Force FY 1997 COSSI Projects					
Mini-Mutes replacement processor	F04606-97-4-0001	\$34,570	\$ 50,966	\$ 87,766	\$173,302
Data distribution kits for command centers	F04606-97-4-0002	9,737	10,465	21,243	41,445
Versa module europa contingency antenna position control unit	F19628-97-4-0001	0	500	1,600	2,100
Commercially based processing for the F-15E	F33657-97-9-2058	30,000	30,000	40,000	100,000
F-16 C/D F110 engine ejector nozzle	F33657-97-4-2059	9,348	25,444	45,176	79,968
Discontinuously reinforced aluminum	F42620-97-4-0001	5,690	5,200	0	10,890
Total		\$89,345	\$122,575	\$195,785	\$407,705
Percent of totals		22	30	48	100
Air Force FY 1999 COSSI Projects					
Lantirn support equipment mid-life upgrade	F09603-99-9-0001	6,919	107,654	205,623	320,196
Menu driven intercommunication system control panel project	F33657-99-9-2033	7,970	4,008	10,232	22,210
F-16 heads up display electronic unit replacement	F33657-99-9-2035	5,202	6,938	5,618	17,758

Table 1. Original Contractor Proposed Operations and Support Savings Projections for COSSI (Cont'd)

(in thousands)

<u>COSSI Title</u>	<u>Agreement No.</u>	<u>1-3 years</u>	<u>Cost Savings 4-6 years</u>	<u>7-10 years</u>	<u>Total</u>
Air Force FY 1999 COSSI Projects (Con't)					
Automated data acquisition system for jet engine testing	F41608-99-9-0288	\$25,846	\$102,360	\$120,637	\$248,843
Internet based information architecture for automatic test system	F41608-99-9-2205	\$ 9,177	\$ 2,845	\$ 3,109	\$ 15,131
Total		\$55,114	\$223,805	\$345,219	\$624,138
Percent of totals		9	36	55	100
Air Force FY 2000 COSSI Projects					
F-16 improved avionics intermediate shop digital signal processing replacement	F33657-99-9-2036	3,682	9,697	11,067	24,446
Commercially based pneumatic weapon ejection system for the F-15E	F33657-00-9-2055	0	92,491	85,386	177,877
APG-68 array processor modernization kit	F42620-00-9-0001	2,785	11,049	41,452	55,286
Total		\$ 6,467	\$113,237	\$137,905	\$257,609
Percent of totals		2	44	54	100

Table 2. Period of Performance and Status for FY 1997 and FY 1999 COSSI⁴ Projects

<u>Agreement</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>Months to Complete</u>	<u>Additional Months</u>	<u>Status</u>
1997 Army Projects					
DAAB07-97-9-D020	September 19, 1997	September 19, 1999	24	9	Stage 1 in process Stage 2 budgeted
DAAB07-97-9-D322	September 29, 1997	September 29, 1998	12	0	Terminated
DAAB07-97-9-D615	September 12, 1997	July 12, 1999	22	10	Stage 1 in process Stage 2 not budgeted
DAAB07-97-9-E312	September 22, 1997	March 22, 1999	18	19	Stage 1 in process Stage 2 not budgeted
DAAB07-97-9-E313	September 22, 1997	December 22, 1998	15	18	Stage 1 in process Stage 2 not budgeted
DAAB07-97-9-E314	September 24, 1997	March 24, 1999	18	15	Stage 1 complete Stage 2 not executed due to technology obsolesce
DAAB07-97-9-E315	September 23, 1997	July 23, 1999	22	11	Stage 1 in process Stage 2 budgeted
DAAB07-97-9-J046	September 30, 1997	September 30, 2000	36	0	Stage 1 in process Stage 2 budgeted

⁴ Commercial Operations and Support Savings Initiative

Table 2. Period of Performance and Status for FY 1997 and FY 1999 COSSI Projects (Cont'd)

<u>Agreement</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>Months to Complete</u>	<u>Additional Months</u>	<u>Status</u>
1999 Army Projects					
DAAB07-97-9-J047	September 18, 1997	March 18, 1999	18	18	Stage 1 in process Stage 2 budgeted
DAAB07-97-9-J048	September 24, 1997	April 24, 1999	19	2	Stage 2 in process
DAAH10-99-9-0001	August 30, 1999	August 30, 2001	24	0	Stage 1 in process, Stage 2 not budgeted
DAAB07-99-9-D286	August 20, 1999	August 20, 2000	12	0	Stage 1 in process, Stage 2 budgeted
DAAB07-99-9-K762	September 10, 1999	September 10, 2001	24	0	Stage 1 in process, Stage 2 not budgeted

Table 2. Period of Performance and Status for FY 1997 and FY 1999 COSSI Projects (Cont'd)

<u>Agreement</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>Months to Complete</u>	<u>Additional Months</u>	<u>Status</u>
1997 Navy Projects					
N00019-97-H-0152	July 16, 1997	July 1, 1999	24	15	Stage 1 in process, Stage 2 budgeted
N00019-97-H-0164	September 18, 1997	February 18, 1998	5	4	Stage 1 complete, Stage 2 not planned or budgeted
N00019-97-H-0172	September 25, 1997	May 25, 1999	20	25	Stage 1 in process, Stage 2 budgeted
N00019-97-H-0173	September 22, 1997	September 22, 2000	36	0	Stage 1 in process, Stage 2 not budgeted
N00024-97-H-4194	August 1, 1997	February 1, 1999	18	5	Stage 1 complete, Stage 2 not budgeted
N00024-97-H-4204	September 8, 1997	September 8, 2000	36	3	Stage 1 in process, Stage 2 not budgeted
N00024-97-H-5247	July 10, 1997	July 10, 1999	24	0	Stage 1 complete, Stage 2 not planned or budgeted
N00024-97-H-6244	July 23, 1997	January 23, 1999	18	20	Stage 1 in process, Stage 2 not planned or budgeted
N00024-97-H-6398	August 29, 1997	August 29, 1999	24	17	Stage 1 in process, Stage 2 not budgeted
N00039-97-C-8001	July 25, 1997	July 25, 1998	12	0	Stage 1 complete, Stage 2 not planned or budgeted
N00039-97-C-8002	September 4, 1997	June 4, 1998	9	0	Stage 1 complete, Stage 2 not planned or budgeted
M67854-97-C-2115	August 15, 1997	August 15, 1999	24	0	Stage 1 complete, Stage 2 not budgeted

Table 2. Period of Performance and Status for FY 1997 and FY 1999 COSSI Projects (Cont'd)

<u>Agreement</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>Months to Complete</u>	<u>Additional Months</u>	<u>Status</u>
1997 Navy Projects (Cont'd)					
M67854-97-C-2116	August 20, 1997	August 20, 1998	12	4	Stage 1 complete, Stage 2 not budgeted
M67854-97-C-2117	September 1, 1997	January 1, 1999	16	15	Stage 1 in process, Stage 2 not budgeted
1999 Navy Projects					
N00019-99-9-1493	June 22, 1999	December 31, 2000	18	0	Stage 1 in process, Stage 2 budgeted
N00019-99-9-1546	September 20, 1999	March 20, 2001	18	0	Stage 1 in process, Stage 2 not budgeted
N00019-99-9-1662	September 23, 1999	June 30, 2001	21	0	Stage 1 in process, Stage 2 not budgeted
N00019-97-H-0152/ P00002	September 30, 1999	October 16, 2002	36	0	Stage 1 in process, Stage 2 budgeted
N00024-99-2-4161	September 30, 1999	December 30, 2001	27	0	Stage 1 in process, Stage 2 not budgeted

Table 2. Period of Performance and Status for FY 1997 and FY 1999 COSSI Projects (Cont'd)

<u>Agreement</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>Months to Complete</u>	<u>Additional Months</u>	<u>Status</u>
1997 Air Force Projects					
F04606-97-4-0001	September 11, 1997	November 11, 1998	14	0	Stage 2 in process
F04606-97-4-0002	September 15, 1997	March 11, 1999	18	3	Stage 2 in process
F19628-97-4-0001	September 23, 1997	April 23, 1999	19	18	Stage 1 complete, Stage 2 budgeted and awaiting contract approval
F33657-97-9-2058	September 15, 1997	September 15, 2000	36	0	Stage 1 in process, Stage 2 budgeted
F33657-97-4-2059	September 17, 1997	December 30, 1999	27	12	Stage 1 in process, Stage 2 not budgeted
F42620-97-4-0001	August 15, 1997	February 15, 1999	18	12	Stage 2 in process
1999 Air Force Projects					
F09603-99-9-0001	July 27, 1999	October 27, 2000	15	0	Stage 1 in process, Stage 2 budgeted
F33657-99-9-2033	September 24, 1999	March 24, 2001	18	0	Stage 1 in process, Stage 2 budgeted
F33657-99-9-2035	August 16, 1999	April 16, 2001	20	0	Stage 1 in process, Stage 2 not budgeted
F41608-99-9-0288	June 11, 1999	December 22, 2000	18	0	Stage 1 in process, Stage 2 budgeted
F41608-99-9-2205	September 10, 1999	July 31, 2000	10	0	Stage 1 in process, Stage 2 budgeted

Appendix E. Comments of the Deputy Under Secretary of Defense (Science and Technology) on Finding A and Audit Response

DUSD (S&T) comments to the draft report addressed specific areas that DUSD (S&T) believed needed to be changed for report accuracy. Below identifies the DUSD (S&T) comment and audit response.

Management Comments. DUSD (S&T) provided comments on the finding and noted differences in the number of COSSI awards. DUSD (S&T) stated that there were 60 awards made in FYs 1997, 1999, and 2000, and that changes to Table 1 were necessary.

Audit Response. We revised the audit report to show that 59 COSSI projects were awarded in FYs 1997, 1999, and 2000. The difference of one project is represented by the Army's issuing an FY 1998 modification to an FY 1997 COSSI agreement and OSD recording the modification as an FY 1999 COSSI project. This audit did not treat the FY 1998 modification as a new agreement because it was associated with the original FY 1997 effort and the FY 1998 modification was funded with FY 1998 appropriated funds; there were no funds available for COSSI projects in FY 1998.

Management Comments. DUSD (S&T) stated that the report was inaccurate in identifying that four 4 of 30 FY 1997 COSSI projects transitioned or will transition to Stage 2. DUSD (S&T) stated that 7 projects had transitioned or will transition:

- MILSTAR Antenna Control Unit,
- Discontinuous Reinforced Aluminum,
- Guardrail Computer Replacement,
- Mini-Mutes Replacement Processor,
- Movement Tracking System,
- Data Distribution Kits,
- Health and Usage Monitoring System for CH-53 and SH-60 Helicopters.

DUSD (S&T) also listed seven other COSSI projects that are likely to transition.

Audit Response. The draft report identified 4 of 30 FY 1997 COSSI projects that had transitioned or would transition to Stage 2 production. The four projects included the Versa Module Europa Contingency Antenna Position Control Unit (MILSTAR Antenna Control Unit), Mini-Mutes Replacement Processor, Movement Tracking System, and the Data Distribution Kits. The

Discontinuously Reinforced Aluminum did not result in a direct procurement by DoD, but rather enabled a subcontractor to sell larger aluminum sheets to its prime contractor for the F-16 aircraft. In processing the final report, we conducted discussions with the responsible project manager for the remaining two projects. The Helicopter Usage Monitoring and Diagnostic (referred above as the Health and Usage Monitoring System) for CH-53 and SH-60 Helicopters program was issued a FAR Part 12 contract in January 2001 for the CH-53 portion only; the SH-60 portion remains in Stage 1. The Guardrail Computer Replacement was not pursued because the technology was obsolete. The report was revised to show that three other projects were completed since the end of the audit in September 2000.

In preparing the final report, we reviewed the seven other COSSI projects that DUSD (S&T) believed were likely to transition. We conducted discussions with either the contracting officer or the project manager and found that one project will be procured under a FAR Part 15 contract, one project will be incorporated in the existing contract as an engineering change proposal, one project will be procured under a General Services Administration contract, one project will be introduced through a depot modernization effort, and three projects had no funding available for production procurement.

Management Comments. DUSD (S&T) stated that Table 2 should show 2 of 5, instead of 2 of 3, Army projects for FY 1999.

Audit Response. The two additional projects included in management comments were the Low Cost First and Second Stage Compressor Blades for the AFT 1500 Engine and a modification to the Switchable Eyesafe Laser Rangefinder Designator project (Agreement DAAB07-97-9-D615). The Low Cost First and Second Stage Compressor Blades for the AFT 1500 Engine was awarded on September 29, 2000; therefore, we treated the project as an FY 2000 award. Because the project was funded with FY 1999 appropriations, DUSD (S&T) recorded the project as an FY 1999 effort. The other project was the modification (modification number 5) to the Switchable Eyesafe Laser Rangefinder Designator (Agreement DAAB07-97-9-D615); we treated this effort as a modification to an existing project because it was not reported as a COSSI project in the FY 1999 congressional report and the modification was funded with FY 1998 funds. No COSSI funds were appropriated in FY 1998.

Management Comments. DUSD (S&T) stated that Table 3, "FY 1997 and FY 1999 COSSI Projects with Inadequate Military Department Commitment Letters," should be revised. The draft report identified that in FY 1999 the Army had two of three projects with inadequate letters; DUSD (S&T) stated that the data should show zero of five.

Audit Response. The difference in the number of projects in FY 1999 was based on when the project was recorded as previously discussed (fiscal year funding of the project versus the fiscal year of the other transaction award).

The two Army projects that we determined did not have adequate Military commitment letters were for the Integrated Mechanical Diagnostic Health Usage system and the Sand Erosion Kits for the Apache. For the Integrated Mechanical Diagnostic Health Usage system, the commitment letter stated, "the

Project Management Office will provide planning necessary to incorporate the HUMS technology into the Modernized Black Hawk program should the technology prove cost effective and if funding remains available.” For the Sand Erosion Kits, the commitment letter stated, “upon successful completion of Stage 1 and within programmatic and funding constraints, this office will consider incorporating the erosion protection system into the AH-64D Apache.” We classified these commitment letters as inadequate due to their uncertainty whether Stage 2 funds would be available.

Management Comments. DUSD (S&T) stated that notional time to complete projects was listed as 1 to 2 years, but that this timeframe was too ambitious for engineering activities, testing, and qualification. DUSD (S&T) stated that 2 to 3 years was more realistic.

Audit Response. We compared the COSSI projects to a performance period of 2 years because that was the parameter used by OSD. Table 5 reflects the period of time that COSSI projects extended beyond the initial negotiated period.

Management Comments. DUSD (S&T) stated that the report paragraph pertaining to the Switchable Eyesafe Laser Rangefinder Designator is misleading. The FY 97 project was designed to integrate and develop a single laser design for the Kiowa Warrior. The FY 1999 project for the Apache design to replace the existing laser suffered from low power output and parts obsolescence. DUSD (S&T) stated that those are separate efforts.

Audit Response. The Switchable Eyesafe Laser Rangefinder Designator project had significant effort changes. The other transaction agreement statement of work was completely changed, including additional efforts to the “Development of Improved Diode Array Stack” for the Kiowa, to incorporate the requirement for “Air and Land Enhanced Reconnaissance and Targeting,” to incorporate the “Apache Laser Upgrade Program,” subsequent revisions to the for both the Kiowa and Apache work efforts, and later additions to the Apache effort including adding tasks and splitting the effort into two phases. The original Apache effort (modification number 5) was funded with Army FY 1998 funds and was modified on September 28, 1998. Examination of this project identified a departure from the original COSSI project of modernizing the laser in the Kiowa Mast Mount. This project provides a good example of a program’s deviating from the initial proposal and the need for management oversight of COSSI projects.

Management Comments. DUSD (S&T) stated that the report suggested that the selection criteria be changed to give greater weight to O&S projects with near-term savings. DUSD (S&T) stated that O&S analysis ranks projects using net present values and, accordingly, projected out-year savings are being discounted and near-term savings are given greater weight than out-year savings. DUSD (S&T) also stated that there is a recovery period and that no savings can occur until the prototype is developed and inserted into a system. It is only until the prototype is inserted into the system that savings occur and it is unlikely to have significant savings during the first few years of a project.

Audit Response. We were aware of the COSSI evaluation process using net present value. The recent creation of the COSSI Steering Committee and the establishment of a formal COSSI process for tracking operations and support cost savings should assist management in identifying whether and when actual savings materialize and should be the basis of initiating future management corrective actions.

Management Comments. DUSD (S&T) stated that the report only looks at prime contractor and does not give consideration to firms who joined with the prime contractor to create a team. DUSD (S&T) stated that if the prime contractor reaches out to a nontraditional firm to use commercial technology, the program is achieving its objectives. DUSD (S&T) stated that of the 60 COSSI projects, 27 projects included at least one new contractor participant.

Audit Response. The audit report identifies that 20 of the 59 COSSI projects included a nontraditional contractor. Table 9 identifies traditional, nontraditional, and non-profit contractor participation obtained from either the other transaction agreement or the contractor proposal. DUSD (S&T) is correct; Table 9 does not reflect additional contractors who subsequently participated in the projects because they would not have been identified in the original agreements.

Management Comments. Page 22 lists Dynamic Private Virtual Networks as an active project. This project was terminated.

Audit Response. Discussions with the Project Manager for this project identified that the project was not terminated. The contractor issued the final report for Stage 1 on November 16, 2000; subsequently, a decision was made not to progress to Stage 2.

Management Comments. Page 22 states that Stage 2 for the Heads Up Display is not budgeted. This is incorrect. Stage 2 is budgeted.

Audit Response. Discussions with the Project Manager in preparation of this final report identified that the project was included in the budget as an “unfunded requirement.”

Management Comments. Page 23 shows the Composite Trailer Van as an active project. This was terminated.

Audit Response. This project was terminated in December 2000, after the issuance of the draft report.

Management Comments. Page 24, second paragraph, delete “A Common Interoperable” from the title of the project.

Audit Response. The title to this COSSI project was obtained from the Other Transaction agreement issued on August 30, 1999.

Management Comments. Page 24 states that Stage 2 for the Integrated Mechanical Diagnostic/Health Usage Monitoring System is not budgeted. This is incorrect. Stage 2 is budgeted.

Audit Response. Discussions with the Project Manager in preparation of the final report identified that the project was included in the budget as an “unfunded requirement.”

Management Comments. Page 24 states that Stage 2 for the Sand Erosion Resistance Kits is not budgeted. This is incorrect. Stage 2 is budgeted.

Audit Response. Discussions with the Project Manager during preparation of the final report identified that the project is not budgeted.

Management Comments. The “Switchable Eyesafe Laser Rangefinder/Designator for the Apache” should be added as a FY 1999 project.

Audit Response. The Switchable Eyesafe Laser Rangefinder/Designator for the Apache was identified as a FY 1997 project because this modification effort was an addition to an existing FY 1997 COSSI project, was not reported as a COSSI project in the FY 1999 congressional report, and the modification was funded with FY 1998 funds. No COSSI funds were appropriated in FY 1998.

Management Comments. The “Portable Engine Test Cell Capability for CH-57 and MH-57 Helicopters” should be listed as an FY 1999 project.

Audit Response. This project was listed as an FY 2000 effort because the other transaction agreement issued by the U.S. Army Aviation and Missile Command identified the agreement effective date of October 5, 1999, which is FY 2000.

Management Comments. The Army FY 2000 projects on page 24 should be:

- Guardrail Common Sensor Replacement Receivers.
- Install, Integrate, and Support COTS NDI Displays, Digital Map, Stores Management System, and IR Suppressor to the OH-58DI.
- Low Cost AGT1500 Compressor Blades (DAAE07-00-9-0002)

Audit Response. The audit listed the COSSI projects by the fiscal year in which the prototype other transaction agreement was issued (awarded) by the responsible organization. DUSD (S&T) listed projects by the fiscal year in which the project was funded. As a result, there are differences in the categorization of individual projects by fiscal year in this report. The draft audit report did not include the agreement for the Low Cost AGT1500 Compressor Blades because this agreement was issued on September 29, 2000, after the audit field work. We have revised the report to include this agreement as an FY 2000 project.

Management Comments. On page 26, the words, “Commercially Based Processing for E2C/C2A” should be replaced with “Blade Inspector Kit for E2C/C2A”.

Audit Response. The title of “Commercially Based Processing for E2C/C2A” was obtained from the other transaction agreement. We modified the title for this agreement to include Blade Inspector Kit for E2C/C2A.

Management Comments. Page 32, the Network Centric Meteorological/Oceanographic Device (METOC), N00039-00-9-4000 should be added to the list of projects resulting from the FY 1999 solicitation.

Audit Response. The audit report was revised to reflect this FY 2000 award.

Management Comments. Page 31, the Acoustic Emission for Periodic Inspection of Composite Pressure Vessels, N00024-00-9-4122 should be added as a project resulting from the FY 2000 solicitation.

Audit Response. The audit report was revised to reflect this FY 2000 award (through a subsequent modification, the agreement number was changed to N00024-00-9-4136).

Appendix F. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)
Deputy Under Secretary of Defense (Acquisition Reform)
Deputy Under Secretary of Defense (Science and Technology)
Director, Defense Research and Engineering
Director, Defense Procurement

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Assistant Secretary of the Army (Acquisition, Logistics, and Technology)
Commander, Army Materiel Command
Commander, Aviation and Missile Command
Commander, Communications and Electronics Command
Commander, Tank-Automotive and Armaments Command
Commander, Combined Arms Support Command
Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Research, Development, and Acquisition)
Commander, Naval Air Systems Command
Commander, Naval Sea Systems Command
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Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Reform
House Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations, Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform
House Subcommittee on Technology and Procurement Policy, Committee on Government Reform

Office of the Secretary of Defense Comments



OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING

THRU: DIRECTOR, ACQUISITION RESOURCES & ANALYSIS *MS 2/12/01*

SUBJECT: Audit Report on Management of the Commercial Operations and Support Savings Initiative Program (Project No. D2000AB-0113)

Thank you for providing us the opportunity to comment on the subject draft DoD IG Audit Report. This is a dual signature response. At Attachment 1 is the office of the Director, Defense Research & Engineering's response to the recommendations and findings in Part A. At Attachment 2 is the Director, Defense Procurement's response to the recommendations and findings in Part B. We would be happy to meet with you, individually or together, to discuss our comments.

FEB - 8 2001

Delores M. Etter
Deputy Under Secretary of Defense
(Science & Technology)

FEB 2 2001

Deidre A. Lee
Director, Defense Procurement

Attachments:
As stated



RESPONSE TO PART A OF THE DRAFT AUDIT REPORT: MANAGEMENT OF
THE COMMERCIAL OPERATIONS AND SUPPORT SAVINGS INITIATIVE
PROJECT NUMBER D2000AB-0113

Audit Recommendation A-1: We recommend that the Director, Defense Research and Engineering:

1. Establish a management oversight program for the Commercial Operations and Support Savings Initiative that requires a formal review of Stage 1 funded projects annually. The formal annual reviews should include an examination of the status of Stage 1 funded projects to determine whether the projects are progressing as initially proposed, whether the projects deviated from the modification of existing commercial technology, and whether the Military Department project managers took adequate actions for Stage 2 procurement.

DDRE& Response: Concur. COSSI projects are reviewed periodically to determine if objectives are being met. In November 1999, OSD received responses to a data call initiated to determine the status of all FY 1997 projects. In order to have real time project data, a web based monitoring and tracking system is being developed to track projects on an ongoing basis. The system will allow the status of all COSSI projects to be updated as changes occur. Additionally the Military Departments conduct reviews on the status of COSSI projects. A more formal review process will be initiated on an annual basis.

Audit Recommendation A-2: We recommend that the Director, Defense Research and Engineering:

2. Issue guidance that precludes the use of Stage 1 funds for obtaining training and technical data.

DDR&E Response: Partially concur. Stage 1 funds should not be used to acquire training; however, it is appropriate to use Stage 1 funds to acquire technical data should that be necessary. At the end of Stage 1, technical data may be needed if a determination is made to acquire the prototype from other than the Stage 1 contractor. Although unlikely, this scenario is not implausible. DoD should retain the flexibility to obtain technical data in Stage 1 if the acquisition of such data is deemed to be in the best interest of DoD.

Audit Recommendation A-3: We recommend that the Director, Defense Research and Engineering:

3. Establish a formal process to track operations and support costs savings for the Commercial Operations and Support Savings Initiative projects that have transitioned to Stage 2 procurement.

DDR&E Response: Concur. As the report mentions, a Steering Committee was established to provide oversight and direction for the COSSI program. The Steering Committee is the appropriate forum to address this issue.

Audit Recommendation A-4: We recommend that the Director, Defense Research and Engineering:

4. Modify selection criteria for the Commercial Operations and Support Savings Initiative projects to emphasize the selection of proposals that project near-term savings.

DDR&E response: Do not concur. The O&S analysis performed to rank project proposals uses net present value figures based on discount factors specified by the Office of Management and Budget (OMB). Accordingly, projected outyear savings are being discounted in accordance with the requirements specified by OMB. For example, a \$1,000 projected savings claimed in FY 2015 would be discounted to \$671 in terms of FY 2001 dollars. A \$1,000 projected savings in FY 2002 would be discounted to \$948 in terms of FY 2001 dollars. Therefore, near term savings are given greater weight than outyear savings. Implementation of recommendation 4 would effectively force discount factors other than those specified by OMB to be used. It is also important to remember that there is a recovery period for the Stage 1 investment. No savings can occur until the prototype is developed and inserted into a system. During Stage 1, operation and support costs continue as if the project were never initiated. Only after Stage 1 is completed and the prototype is inserted into the system in Stage 2 do savings begin to occur. It is unlikely to have any significant savings during the first few years of a project.

Other comments

The COSSI Program Office categorizes projects according to fiscal year funding. The following comments are based on that categorization.

On page 1, the second paragraph should read, "The Military Departments initiated 46 COSSI projects as a result of the FY 1997 and FY 1999 solicitations and 14 projects as a result of the FY 2000 solicitation.

On page 1, Table 1 should show five FY 1999 projects for the Army for a value of \$12,619,158 and six FY 1999 projects for the Navy for a value of \$14,442,546.

On page 3 the report states, "*COSSI projects are not subject to formal program oversight reviews or any type of performance measure to ensure that projects are meeting COSSI objectives.*"

COSSI projects are reviewed periodically to determine if objectives are being met. In November 1999, OSD received responses to a data call initiated to determine the status of all FY 1997 projects. A web based project monitoring and tracking system is being developed to track projects on an ongoing basis. The system will allow the status

of all COSSI projects to be updated as changes occur. Additionally the Military Departments conduct reviews on the status of COSSI projects.

On page 3 the report states, "...only 4 of the 30 FY 1997 COSSI projects transitioned or will transition to Stage 2...." This is an inaccurate statement. So far, seven 1997 projects (MILSTAR Antenna Control Unit, Discontinuous Reinforced Aluminum, Guardrail Computer Replacement, Mini-MUTES Replacement Processor, Movement Tracking System, Data Distribution Kits, Health and Usage Monitoring System for CH-53 and SH-60 Helicopters) have transitioned into Stage II production. Moreover, we believe the likelihood of several other 1997 projects transitioning to production is very good. These include the Replacement Computer for the UH-60, Composite Rotor Blade for the UH-60, Integrated Data Capture and Analysis, the Engine Ejector Nozzle for the F-16, Flat Panel Display for the Aviators Night Vision Imaging System, Switchable Eyesafe Laser Rangefinder/Designator for the OH-58, and the Affordable Apache Rotor System.

On page 4, Table 2 should show 2 of 5 instead of 2 of 3 for the Army FY 1999 projects.

On page 4 the report states, "*The COSSI guidelines require the commitment letters to state that: the Military Department project manager has Stage 2 procurement funds available for introducing the proposed commercial technology into the fielded military system.*"

The solicitation for FY 1997 projects does not require the commitment letter from the Military Department to be this specific. The guidelines require the military customer to address funding for stage 2 but do not require those funds to be in place at the time the letter is submitted. Indeed, because proposals are submitted by contractors in response to a solicitation, a Military Department may not know about a project until it is proposed and, therefore, could not possibly budget for Stage 2 production beforehand.

On page 5 Table 3, the FY 1999 line should be 0 of 5 for the Army.

Table 4 on page 6 is misleading. The title of the table suggests that a determination on which projects will transition into Stage II production can be made with 100 percent certainty. As stated previously, the likelihood of several projects transitioning to production is very good although the possibility exists that some might not transition for reasons unforeseen at this time. The title of Table 4 should be changed to "Projects That Transitioned or Will Likely Transition to Stage 2 Production" and should be revised to show 7 of 10 for the Army, 2 of 14 for the Navy, and 5 of 6 for the Air Force.

Table 5 on page 7 should be deleted. These projections should be certified before being published in an official report.

The report discusses the length of the development process on page 7. While it is true the notional time to complete prototype development was listed as one to two years, this timeframe is too ambitious. In Stage 1 of the COSSI process, engineering activities are performed to develop a prototype. Once the prototype is developed, it has to be thoroughly tested to ensure it functions properly and interfaces correctly with other components in a particular system. This testing and qualification can be rigorous, especially when the project involves aircraft. Accordingly, a two to three year time frame for Stage 1 is more realistic.

The paragraph pertaining to the Switchable Eyesafe Laser Rangefinder/designator on page 8 is misleading. The FY97 Switchable Eyesafe Laser Rangefinder Designator program was designed to integrate and develop a single laser design for the Kiowa Warrior. The FY99 Switchable Eyesafe Laser Rangefinder Designator for the Apache AH64 A/D Longbow was designed to replace the existing AH64 laser that suffers from low power output and parts obsolescence. These are separate efforts although both projects are being conducted by the same contractor, Kollsman Inc. The FY99 program was added as a modification to the FY97 Agreement.

The report discusses the operation and support (O&S) cost savings on pages 10 and 11 suggesting that the selection criteria be changed to give greater weight to projects with near term savings. The O&S analysis performed to rank project proposals uses net present value figures based on discount factors specified by the Office of Management and Budget (OMB). Accordingly, projected outyear savings are being discounted in accordance with the requirements specified by OMB. For example, a \$1,000 projected savings claimed in FY 2015 would be discounted to \$671 in terms of FY 2001 dollars. A \$1,000 projected savings in FY 2002 would be discounted to \$948 in terms of FY 2001 dollars. Therefore, near term savings are given greater weight than outyear savings. It is also important to remember that there is a recovery period for the Stage 1 investment. No savings can occur until the prototype is developed and inserted into a system. During Stage 1, operation and support costs continue as if the project were never initiated. Only after Stage 1 is completed and the prototype is inserted into the system in Stage 2 do savings begin to occur. It is unlikely to have any significant savings during the first few years of a project.

Page 12 of the report discusses new contractor participation. The report only looks at prime contractors and does not give consideration to firms that have joined with the prime as part of a team. One purpose of the COSSI program is to leverage commercial technologies. If a prime contractor reaches out to a non-traditional DoD supplier to use a commercial technology for a military purpose, then the program is achieving its objectives. The National Defense Authorization Act for FY 2001 recognizes the importance of having nontraditional defense contractors participate on prototype development projects. A provision in the Act allows for the use of Other Transaction Authority when "there is at least one nontraditional defense contractor participating to a significant extent in the prototype project." Of the 60 projects resulting from the FY 1997, FY 1999 and FY 2000 solicitations, 27 included at least one new contractor participant.

Final Report
Reference

Page 22

Page 21 lists Dynamic Private Virtual Networks as an active project. This project was terminated.

Page 22

Page 21 states that Stage 2 for the Heads Up Display is not budgeted. This is incorrect. Stage 2 is budgeted.

Page 23

Page 22 shows the Composite Trailer Van as an active project. This project was terminated.

Page 24

On page 23, second paragraph, delete "A Common Interoperable" from the title of the project.

Page 24

Page 23 states that Stage 2 for the Integrated Mechanical Diagnostic/Health Usage Monitoring System is not budgeted. This is incorrect. Stage 2 is budgeted.

Page 24

Page 23 states that Stage 2 for the Sand Erosion Resistance Kits is not budgeted. This is incorrect. Stage 2 is budgeted.

Page 25

The "Switchable Eyesafe Laser Rangefinder/Designator for the Apache" should be added as a FY 1999 project.

The "Portable Engine Test Cell Capability for CH-57 and MH-57 Helicopters" should be listed as a FY 1999 project.

The Army FY 2000 projects on page 24 should be:

- Guardrail Common Sensor Replacement Receivers..
- Install, Integrate, and Support COTS NDI Displays, Digital Map, Stores Management System, and IR Suppressor to the OH-58DI.
- Low Cost AGT1500 Compressor Blades (DAAE07-00-9-0002).

Page 26

On page 25, the words "Commercially Based Processing for E2C/C2A" should be replaced with "Blade Inspection Kit for E2C/C2A".

Report
revised
page 32

Page 29, the Network Centric Meteorological/Oceanographic Device (METOC), N00039-00-9-4000 should be added to the list of projects resulting from the FY 1999 solicitation.

Report
revised
page 31

Page 31, the Acoustic Emission for Periodic Inspection of Composite Pressure Vessels, N00024-00-9-4122 should be added as a project resulting from the FY 2000 solicitation.

**Final Report
Reference**

Page 35, Appendix C, Table 1: The Dynamic Private Virtual Networks (Agreement – DAAB07-97-9-E312) and the Composite Semitrailer Van (Agreement – DAAB07-97-9-J047) were terminated.

Page 37

Page 36, Table 1, FY00 Projects: The Portable Engine Test Cell Capability for the CH-47 and MH-47 Helicopters should be moved to the FY99 projects list.

Page 38

Page 36, Table 1, FY00 Projects: The AGT 1500 Compressor Blades project should be added to the FY00 list.

Page 42

Page 39, add METOC to the list of Navy FY 1999 projects.

Page 42

Page 39, add Acoustic Emission for Periodic Inspection of Composite Pressure Vessels to the list of Navy FY 2000 projects.

Page 42

RESPONSE TO PART B OF THE DRAFT AUDIT REPORT: "MANAGEMENT OF THE
COMMERCIAL OPERATIONS AND SUPPORT SAVINGS INITIATIVE"
PROJECT NUMBER D2000AB-0113, DATED NOVEMBER 20, 2000

Audit Recommendation B: We recommend that the Director, Defense Procurement, issue policy in DoD directives, instructions, or regulations for prototype other transactions that:

1. Identifies when it is appropriate to provide payment of profits and fees in a cost sharing arrangement.
2. Precludes calling other transactions fixed price when cost sharing is negotiated.
3. Clarifies the appropriate use of terms, "support and stimulate," and "reasonable or best effort."

DDP Response: Partially concur.

The USD(AT&L) issued an updated policy memorandum and OT Guide on December 21, 2000, a month after this draft audit report was issued. During the course of the year that this updated guidance was being developed, my office met several times with the OIG and successfully resolved identified areas of concern. In addition, the updated OT Guide incorporated changes to address preliminary OIG input on the COSSI audit. As a result, this Part of the audit report should be eliminated or significantly revised before issuing the final audit report. We believe the updated guidance obviates the need for any of the above policy recommendations.

Payment of profit or fees. New language is included in the OT Guide stating that profit or fee generally should not be permitted on projects that are cost-shared (section C2.17.1.1). Further, the Office of Technology Transition within the office of the Director, Defense Research and Engineering that has oversight responsibility for COSSI, agrees it does not want profit or fee paid on COSSI projects that require cost-share and plans to include this clarification in future solicitations that require cost-share. These changes provide the Agreements Officer guidance that did not exist when the COSSI agreements reviewed by the OIG were awarded, and should discourage inappropriate payment of fee or profit.

Sharing on fixed-price OTs. The updated OT Guide defines a cost-type OT to include agreements that require at least one third of the total costs to be provided by non-federal parties pursuant to statute (i.e., section 803 of the Floyd D. Spence National Defense Authorization Act for FY 2001). Thus, by definition, such an agreement is not a fixed-price type of OT and the OT Guide recognizes that the sections regarding allowable costs, accounting systems and audit pertain to these agreements (sections C2.12, C2.13 and C2.14.1).

We do not agree that in all other cases where "cost sharing" may be provided by the contractor, it is appropriate to preclude the possibility of negotiating a fixed-price type of OT. For example, a fixed-price could be negotiated for a defined requirement that is something short of the total estimated amount for the effort without the agreement identifying a specified cost-share amount or percentage from the contractor. The agreement analysis would recognize the contribution expected from the contractor, but the agreement would only reflect the fixed-price

RESPONSE TO PART B OF THE DRAFT AUDIT REPORT: "MANAGEMENT OF THE
COMMERCIAL OPERATIONS AND SUPPORT SAVINGS INITIATIVE"
PROJECT NUMBER D2000AB-0113, DATED NOVEMBER 20, 2000

to the government. This is comparable to what may occur on FAR contracts where a firm-fixed price is established for less than the estimated value of the effort, thus implicitly recognizing cost share, but still regarding the contract as fixed-price. Though it does not appear this is what was done on the particular COSSI agreements discussed, this possibility should not be precluded when cost-sharing is not statutorily required.

"Support and stimulate" and "reasonable or best efforts". The OT Guide clarifies that OT awards for prototype projects are acquisition instruments and that terms such as "support and stimulate" are assistance terms and are not appropriate in OT agreements for prototype projects (section C1.6). The OT Guide also clarifies that Agreements Officers should not think they have a fixed-price type of OT if an agreement, though identifying the government funding as fixed, only provides for best efforts (C2.1.1.5 and C2.1.3.1.7). "Reasonable or best efforts" is more closely associated with a cost-reimbursement or level of effort approach. Though unrelated to OTA, even FAR Part 35 recognizes that a work statement for a cost-reimbursement contract could promise the contractor's best efforts for a fixed-term or for a defined task and does not limit its use to basic or applied research. Further, it is entirely possible that an OT agreement for a prototype project could require best efforts toward a defined prototype project result, it just would not be a fixed-price type of OT.

Other Comments

Part B of the audit report should be reconsidered and revised to recognize the guidance issued in December 2000 and the efforts made by DoD to address oversight concerns.

Revised

Page 14, Prototype Other Transactions paragraph, should recognize that the Floyd D. Spence National Defense Authorization Act for FY 2001 extended the prototype authority through September 30, 2004.

Revised

Page 14, DoD Guidance paragraph, should be revised. Referring only to the December 14, 1996 AT&L memorandum when there were other DDP policy memorandums and a November 1998 OT Guide issued creates the impression there was no guidance provided beyond the December 1996 memorandum. Further, a one-line sentence addressing the updated guidance (that was issued by the USD(AT&L) on December 21, 2000) downplays the extensive effort undertaken in the past year to resolve comments and concerns, including those of the OIG.

Page 15, last paragraph, the draft report states: "Fixed-price contracts or agreements establish a set price for acquiring items and do not include cost sharing." For the reasons discussed in our response to the recommendation, recommend the sentence be revised to state: "Fixed-price contracts or agreements establish a set price for acquiring items and do not explicitly require cost sharing."

Page 15, last paragraph states: "At the time of an other transaction award, the cost and risk of the prototype development is not fully known, therefore, calling a cost sharing agreement fixed price appears to be inappropriate." (Two similar statements appear on Page 16, 1st paragraph). Two

RESPONSE TO PART B OF THE DRAFT AUDIT REPORT: "MANAGEMENT OF THE
COMMERCIAL OPERATIONS AND SUPPORT SAVINGS INITIATIVE"
PROJECT NUMBER D2000AB-0113, DATED NOVEMBER 20, 2000

separate issues are inappropriately addressed as one. The first issue is whether the cost and risk associated with prototype development can support the negotiation of a fixed-price agreement. Though the cost and risk is never fully known when a contract or agreement is awarded, it is possible to establish a fixed-price contract or agreement for a defined effort if the risk, cost and effort is reasonably understood and can be realistically priced. Whether or not cost-sharing is explicitly required in the agreement, as discussed in our response to the recommendation, is a separate issue.

Page 16, 1st paragraph, states that "A cost share other transaction establishes a ratio of cost sharing that must be maintained to enforce the terms of the agreement." Recommend this sentence be deleted. The OIG is assuming the FAR definition of a cost-share contract applies to an OT. The purpose of OTA is to provide flexibility and not be bound by the FAR. As discussed above, cost share could be implicit in a fixed-price type of OT or could be structured to provide a given amount or other formula for cost share. It is not appropriate to conclude that any agreement that involves contractor contribution establishes a ratio of cost sharing that must be maintained.

Page 16, 2nd paragraph, states that sharing risk is gone if costs and contractor expenditures are not fully known and concludes that guidance is needed that precludes calling an OT fixed price if there is cost sharing. We disagree with this position, as discussed earlier.

Page 16, last paragraph, states that "reasonable or best effort" are used in assistance agreements and acquisitions when acquiring basic and applied research to advance a study of knowledge, with an end product being a research report discussing the results of the effort, concluding that these terms are inappropriate for prototype agreements. We disagree, as discussed in our response to the Recommendation.

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